New as of: 07.2013

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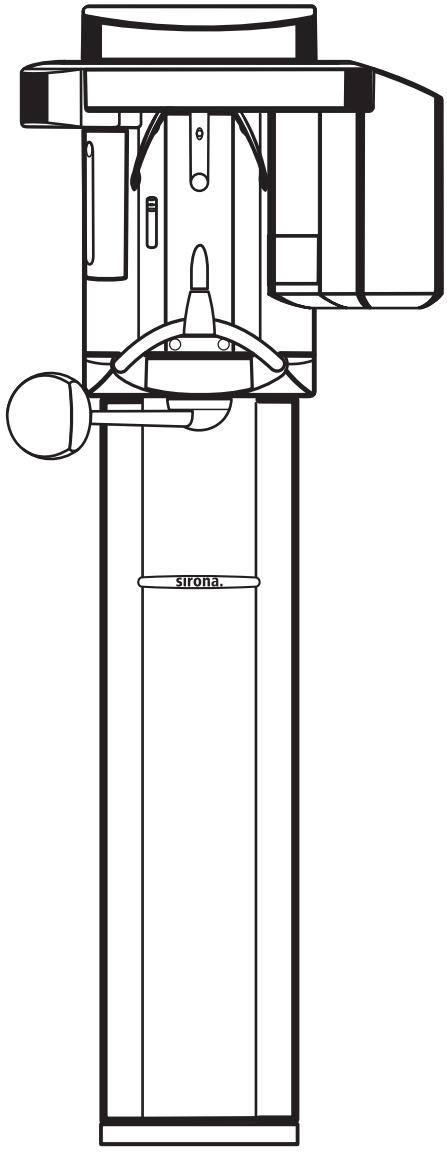
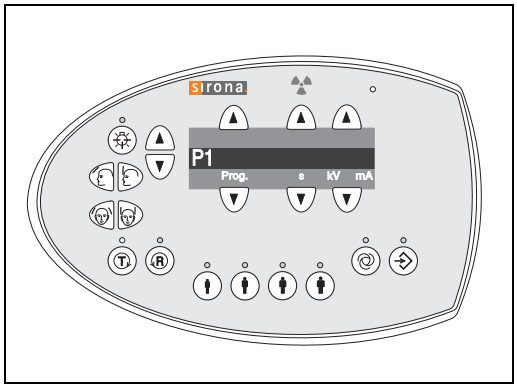
ORTHOPHOS XG 3

Installation Instructions

English





General information

About this document

This document describes the installation of the **ORTHOPHOS XG XG3** panoramic X-ray unit.

For installation, please refer also to the following documents:

- Installation drawings
- "Installation Requirements" (separate document)
- Operating Instructions
- Service Manual
- Installation Report and Warranty Passport
- SIDEXIS XG, Digital Radiography: Installation instructions

Our Customer Service Center can provide the technical documentation in paper form free of charge on request provided that the respective order numbers are specified correctly.

The latest documentation can always be downloaded from the Sirona homepage:

www.sirona.com/HOME/Service/Technical Documentation

New as of: 07.2013

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1 Before you begin

ORTHOPHOS XG 3

1.1 Identification of warnings

Warning and safety information

To prevent personal injury and material damage, please observe the warning and safety information provided in the present operating instructions.

The structure, appearance and use of warning and safety information in Sirona documents are based on the ANSI Z535 standard.

The following warnings may be used in this document:

DANGER

An imminent danger that could result in serious bodily injury or death.

WARNING

A possibly dangerous situation that can result in serious bodily injury or death.

CAUTION

A possibly dangerous situation that can result in slight bodily injury.

NOTICE

A possibly harmful situation which can lead to damage of the product or an object in its environment.

Instructions for use

The following application information may be used in this document:

IMPORTANT

Application instructions and other important information.

Tip: Information on making work easier.

1.2 Safety

DANGER

Fixed connection!
The installation of a power plug instead of the prescribed fixed (hard-wired) connection violates international medical regulations and is prohibited.
In case of a fault, you would thus endanger the life and limb of the patient, the operator or other persons.

WARNING

Installation and startup must be carried out in accordance with the requirements stated in our Installation Instructions.

WARNING

Installation and startup may be carried out only by personnel specifically authorized by SIRONA.

WARNING

Any person who assembles or modifies a medical electrical system complying with the standard IEC 60 601-1-1
(safety requirements for medical electrical equipment) by combining it with other equipment is responsible for ensuring that the requirements of this regulation are met to their full extent for the safety of the patients, the operators and the environment.

If any equipment not approved by SIRONA is connected, it must comply with the applicable standards:

- IEC 60950-1 for information technology equipment and
- IEC 60 601-1 for medical electrical equipment.

See also "On-site installation, dimensions, technical data" and the "Compatibility list/Declaration of conformity" issued by the system integrator.

In case of doubt, contact the manufacturer of the system components.

WARNING

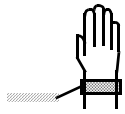
Wireless phone interference with medical electrical equipment:
To ensure safe operation of medical electrical equipment, the use of mobile wireless phones in practice or hospital environments is prohibited.

CAUTION

The unit contains class 1 lasers.
Keep a distance of at least 4" (10 cm) between eye and laser. Do not stare into the beam.
Do not use the system with any other lasers, and do not make any changes to settings or processes that are not described in these operating instructions. This may lead to a dangerous exposure to radiation.

NOTICE

Use an ESD wrist band during installation.
Connect it to the
protective ground wire.



NOTICE

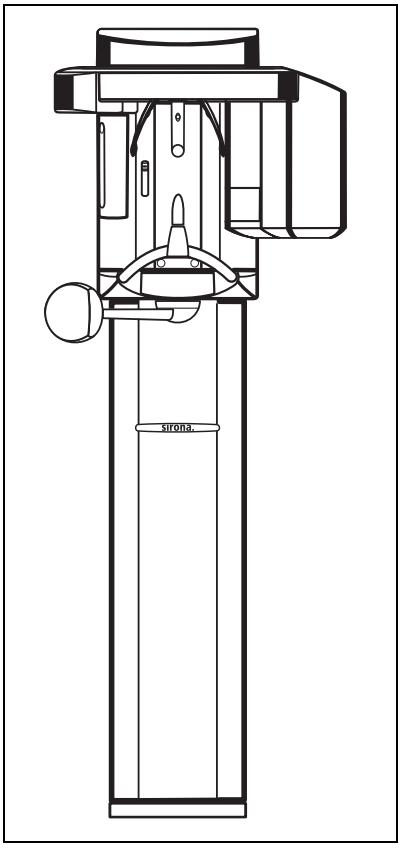
When opening the unit:
Please observe the usual precautionary measures for handling PCBs (ESD).
Touch a ground point to discharge static electricity before handling any components.

NOTICE

Extreme fluctuations of temperature may cause condensation inside the unit. Do not switch the unit on before it has reached normal room temperature.

1.3 System and sensor versions

1.



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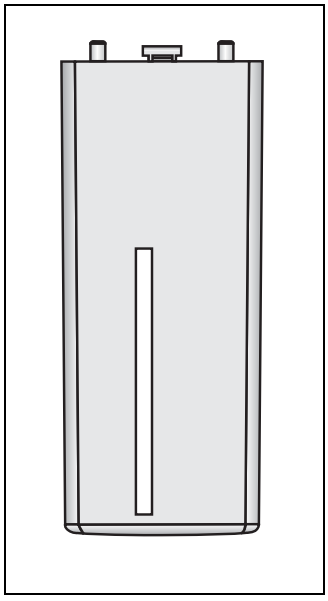
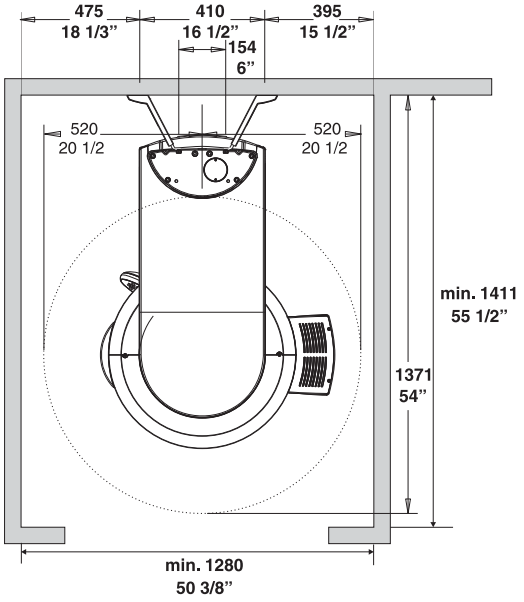
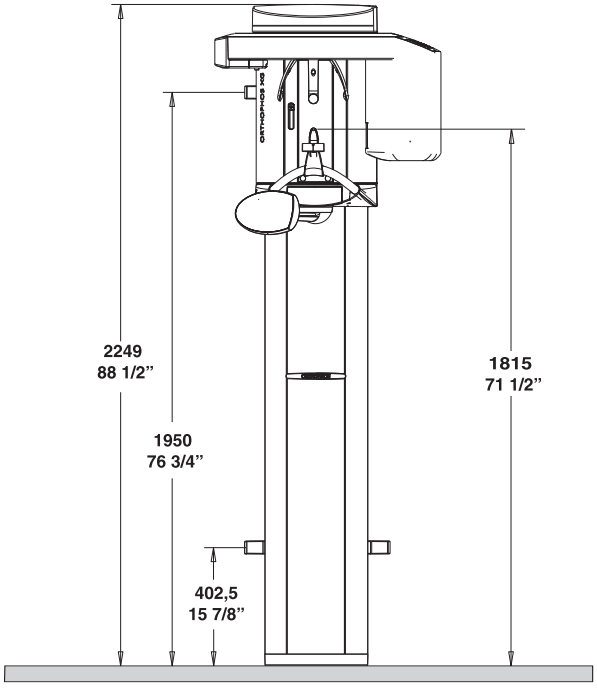
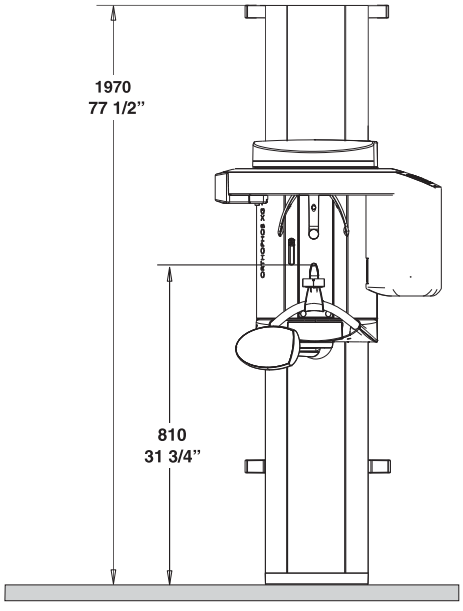


1. **ORTHOPHOS XG 3**
   Digital unit
2. **XG PAN sensor**
   Sensor for panoramic (PAN) X-ray

1.4 Dimensions/Space requirements







NOTICE

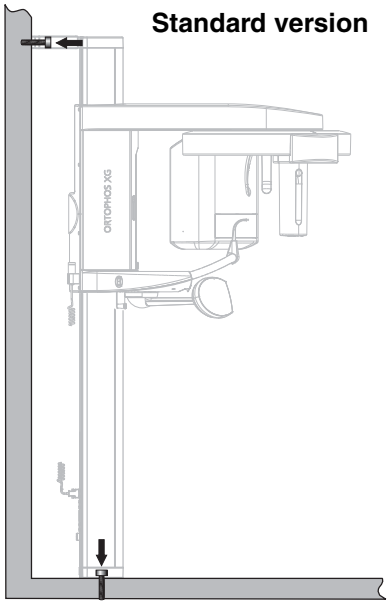
The minimum ceiling height should be 2.10 m (82 11/16"). If the ceiling height is lower than 2.27 m (89 3/8“) (max. travel height of 2.25 m (88 1/2“)), the travel height of the unit must be adjusted or limited prior to startup of the unit (see section 11.1.7).)

NOTICE

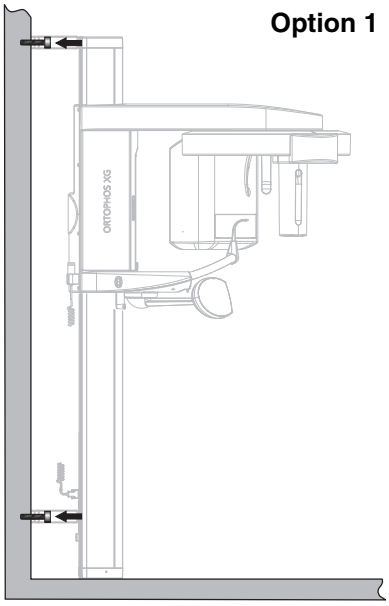
The dimensions specified here apply to installation of the X-ray unit without the floor stand. Installation with the floor stand results in an additional 30 mm (1 3/16“) increase of all height dimensions.

1.5 Mounting options

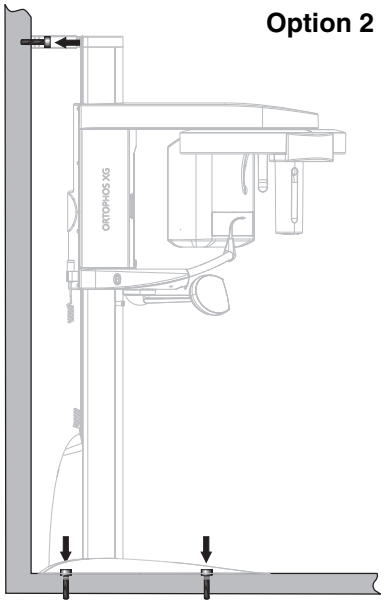
1. **Standard version**



2. **Option 1**



3. **Option 2**



Standard version
(see Section 3.3)

1. **Wall-mounted installation with 1 wall holder and floor fastening** if both wall and floor installation are possible on-site.

Option 1: with second wall holder
(see Section 3.3)

2. **Wall-mounted installation with 2 wall holders** (and no floor fastening) if only wall installation is possible on-site.

Option 2: with floor stand
(see section 3.4)

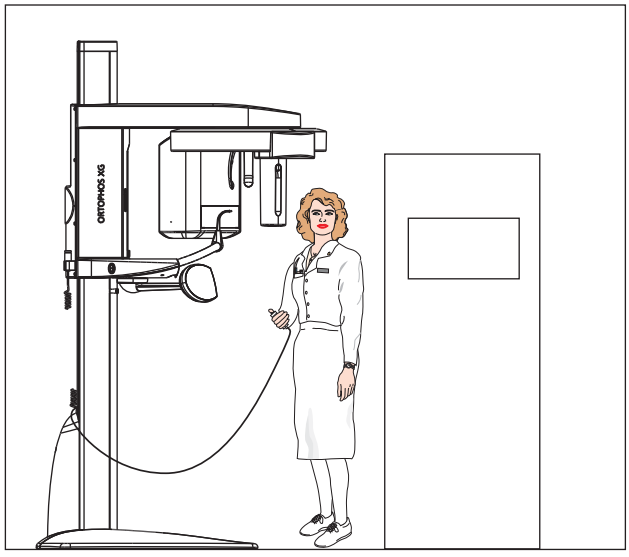
3. Installation with **floor stand** for free installation anywhere in the room or if wall-mounted installation is not possible on-site (e.g. with lightweight walls).

IMPORTANT

If the unit is installed freely with a floor stand, the quality of the resulting X-ray exposures may be impaired, depending on the floor or surface conditions. Sirona therefore recommends additional fastening of the unit with an upper wall holder also when installing it with a floor stand.

1.6 Installation versions

1.



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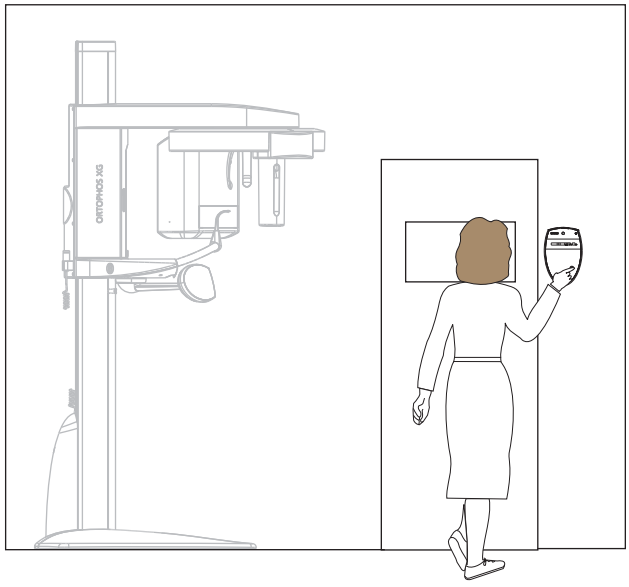
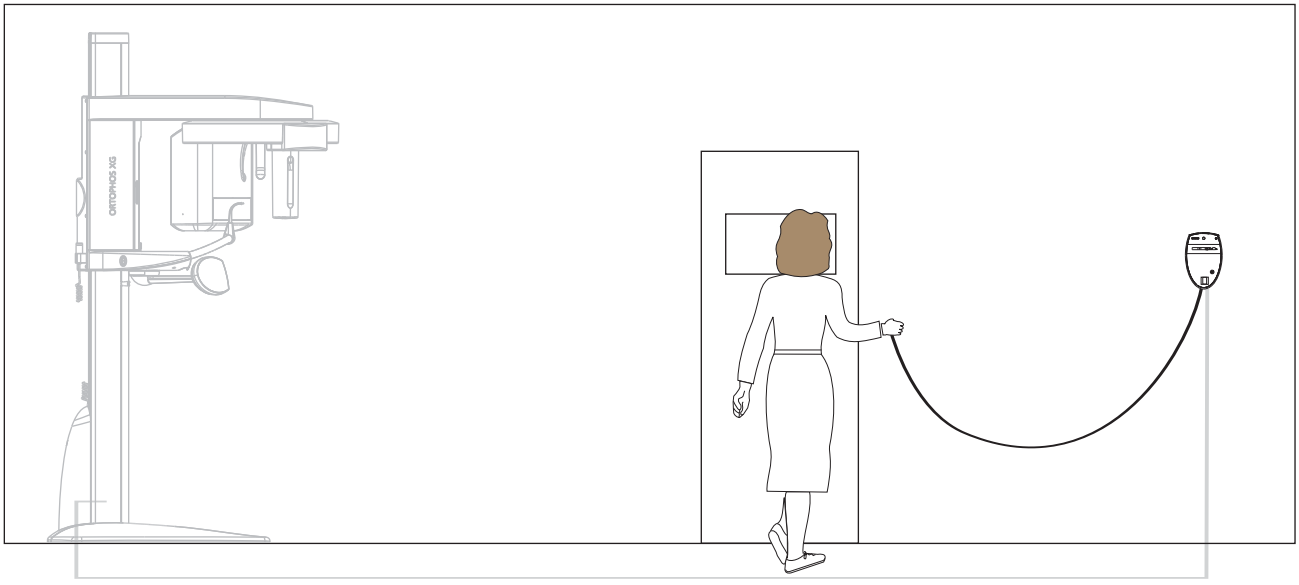


3.



1. **Standard installation:**
   ORTHOPHOS XG 3 **without remote control with release button on the coiled cable** in the treatment room.

2. **Installation version 1** (see section 5.3.1):
   ORTHOPHOS XG 3 **with remote control** outside the X-ray room **without release button on the coiled cable**.

3. **Installation version 2** (see section 5.3.2):
   ORTHOPHOS XG 3 **with remote control** outside the X-ray room **with release button on the coiled cable.**

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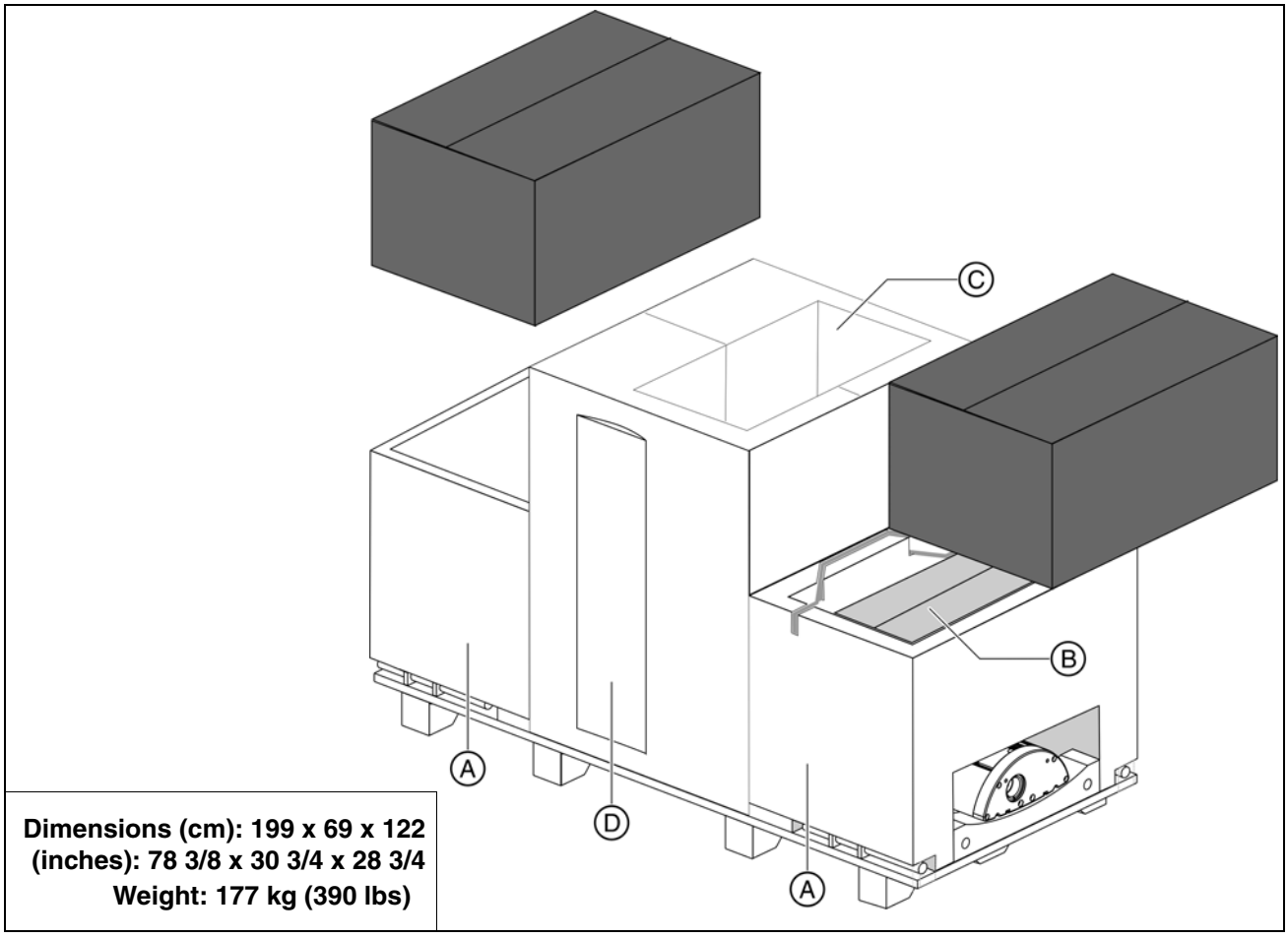
2 Delivery and transport

ORTHOPHOS XG 3

2.1 Delivery



Dimensions (cm): 199 x 69 x 122
(inches): 78 3/8 x 30 3/4 x 28 3/4
Weight: 177 kg (390 lbs)

NOTICE

Possible transport damage!
If the shipment was damaged during transport, document all damage carefully and contact the responsible carrying agent immediately.

All SIRONA equipment is carefully checked and packed prior to shipment. Please carry out an incoming inspection of the equipment in order to make sure that it was not damaged during transport.

- Check the packaging and the equipment for visible signs of damage.
- Check the shipment for completeness based on the attached “scope of supply” checklist.

IMPORTANT

Disposal: *Return the packaging materials to SIRONA or dispose of them in compliance with the legal regulations applicable in your country.*

IMPORTANT

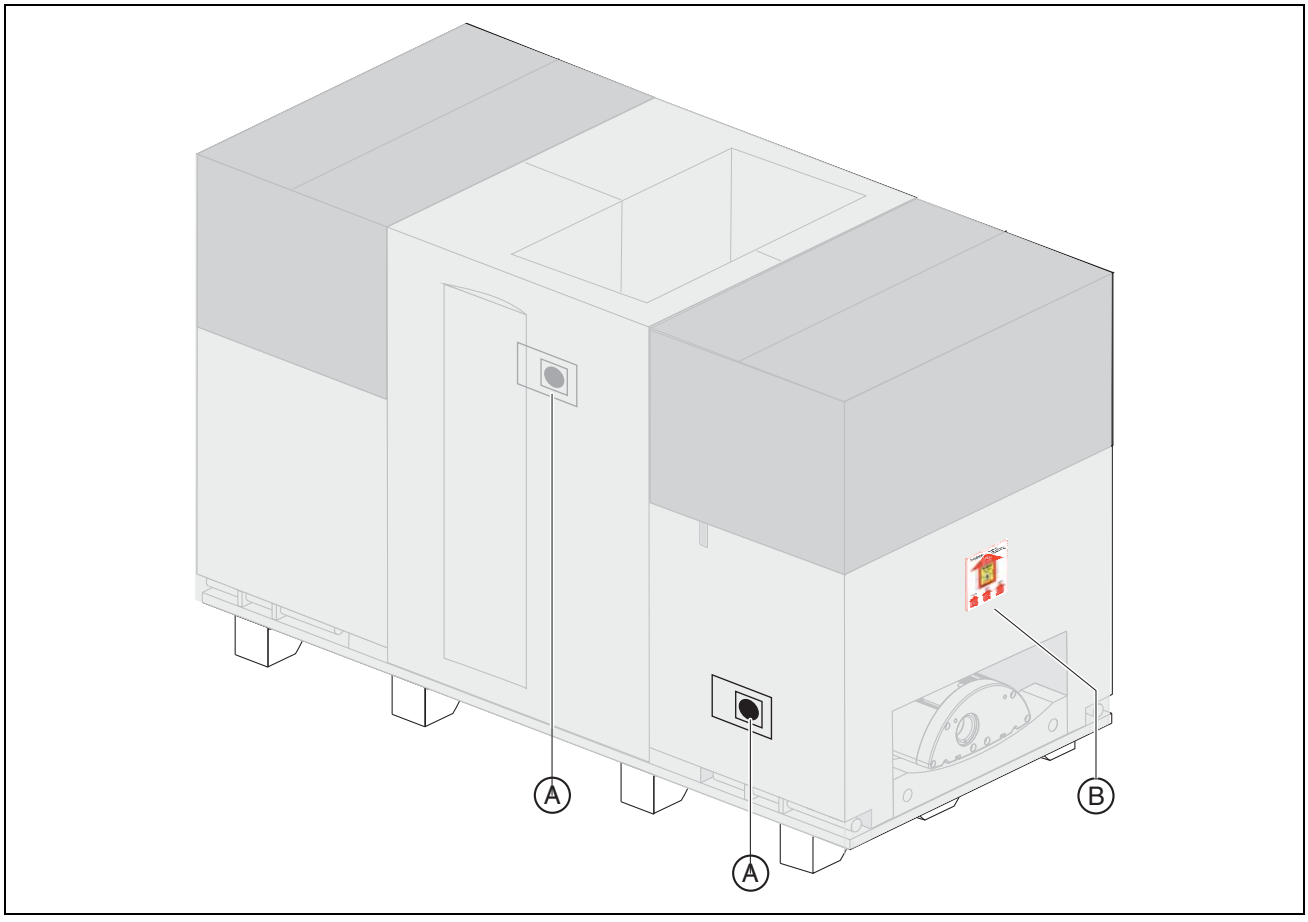
The packaging of the X-ray unit is designed both for protection during transport and as an installation aid.

Therefore, please remove only the surrounding packaging prior to installation. Please leave the styrofoam packaging and transport pallet attached to the unit.

Save one of the lateral styrofoam packaging parts for later use as an installation aid A.

Scope of supply

- Panoramic X-ray unit
- Profile cover (**D**)
- Sensor (**B**)
- Accessories and hygienic protective covers (see pp. 16 ff.) (**B**)
- Installation material (see section 3.1) (**B**)
- Safety strap (**B**)
- Remote control (optional) (**C**)



Two **shock indicators A** are attached to the side of the packaging to indicate whether the unit was exposed to a shock during transport.

- White indicator: No shock
- Red indicator: Shock

A **tilt indicator B** that enables you to recognize whether the unit was transported improperly is also attached to the packaging.

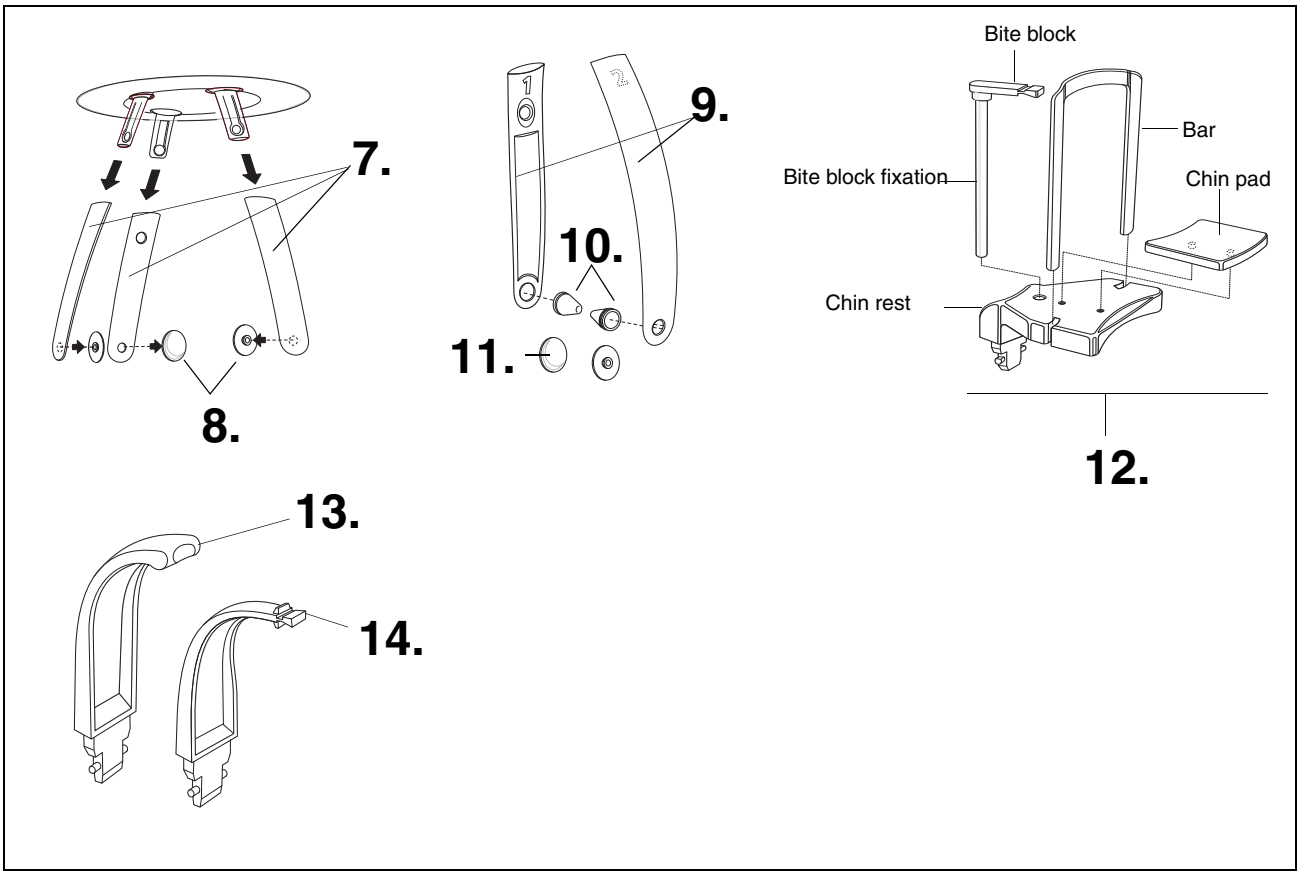
- Red indicator: Improper transport

The display of improper transport doesn't necessarily mean that the unit is damaged.

Make a note on the delivery slip that the indicator is activated. Have this confirmed on the delivery note by the driver of the transport company.

Fax the delivery slip to the Sirona Customer Service Center (CSC).

Enter the state of the indicators in the startup report in the case of warranty claims.



Accessories: Panoramic X-ray unit

1. Forehead (1x) and temple supports (2x)

2. Buttons (2x)

3. Temporomandibular joint supports 1 (1x) and 2 (1x)

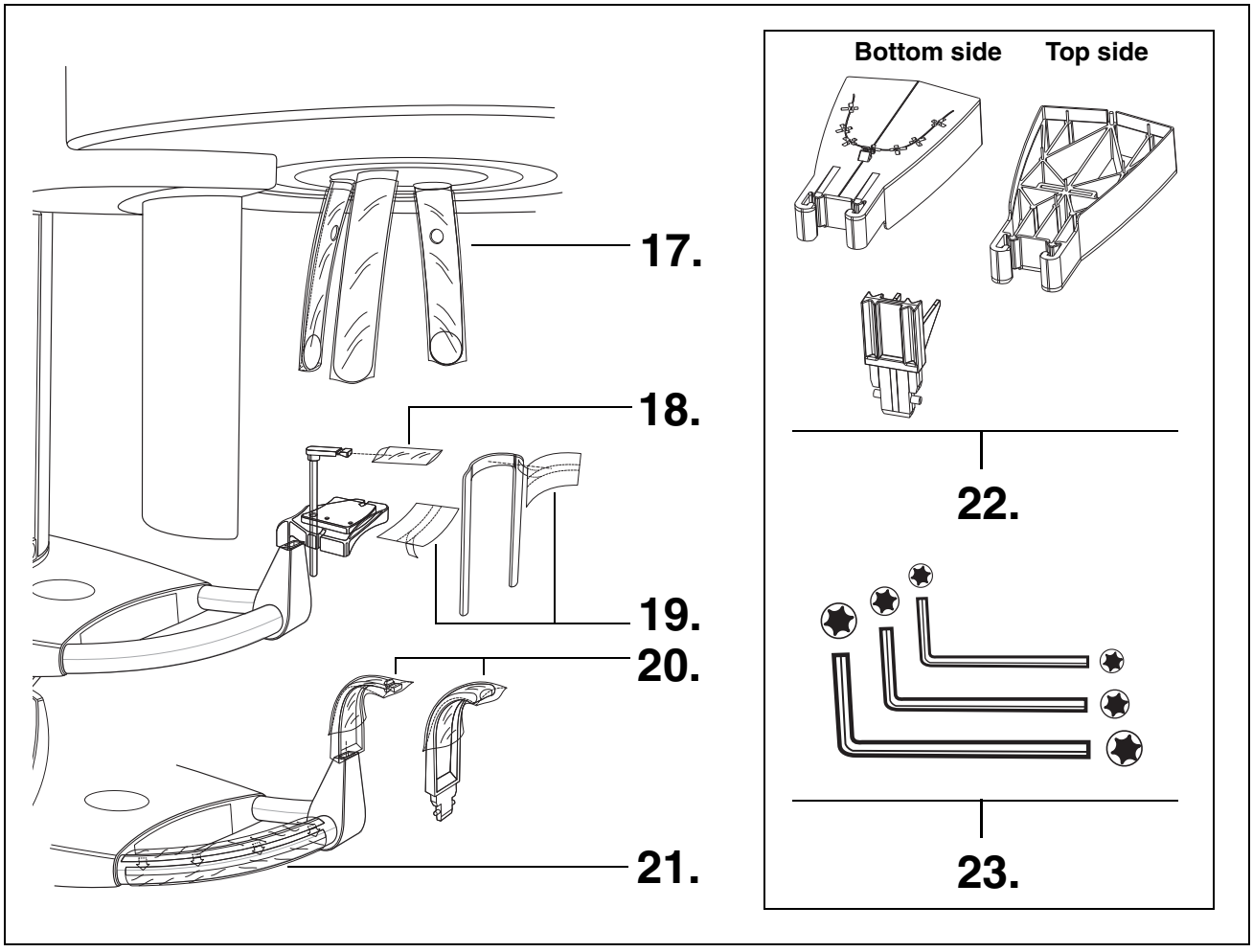
4. Ear holders (4x)

5. Buttons TMJ (2x)

6. Chin rest accessories (1x)
- Bite block (5x)
- Bite block fixation (1x)
- Bar (1x)
- Chin pad (1x)
- Chin rest (1x)

7. Contact segment standard **yellow** (1x)

8. Bite block standard **yellow** (1x)



Hygienic protection

Hygienic protective sleeves for...

9. Forehead and temple supports (500x)

10. Bite block (500x)

11. Chin rest and bar (100x)

12. Bite blocks and contact segments (500x)

13. XG hygienic handle (100x)

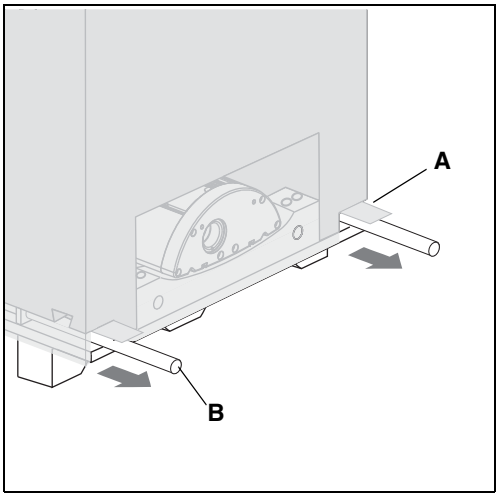
Adjustment set: Panoramic X-ray unit

14. Panoramic needle phantom

15. Set of Torx offset screwdrivers

2.2 Transport to the installation site

1.



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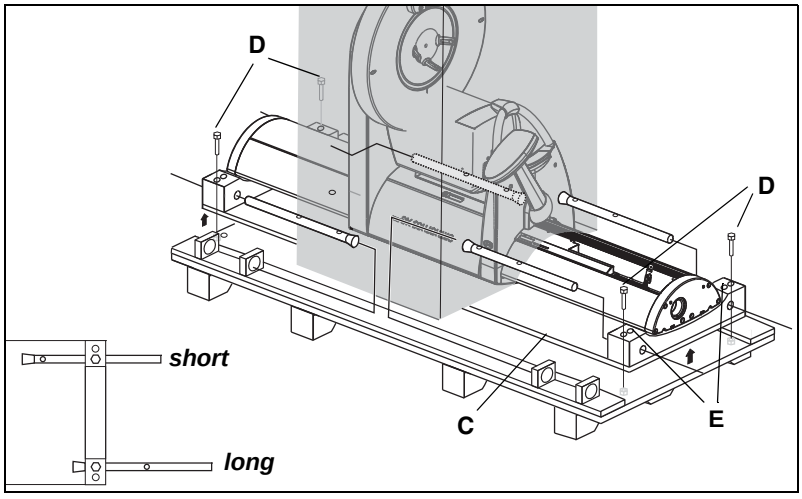

NOTICE

If possible leave the packaging attached to the unit during transport in order to protect it against damage.

1. Transport with packaging attached (normal case)

– Open the surrounding packaging at the tabs provided for that purpose **(A)**, pull out the carrying handles **(B)**, and transport the unit to the installation site.

WARNING

When in transport position, the unit has a very high center of gravity. Take care that the unit does not tip over during transport.

2. Transport without pallet (exception)

IMPORTANT

*If the pallet is too wide for transport to the installation site, you may unscrew the pallet from wooden support **C** and transport the unit by means of the wooden supports without the pallet.*

To do this, proceed as follows:

– Remove the surrounding packaging, the two cardboard boxes, as well as the two lateral styrofoam parts.

– Loosen the four screws **D**.

NOTICE

The center styrofoam part should remain attached to the unit for protection. If this is not possible, SIRONA recommends securing the tube assembly in its position with the supplied strap prior to any further transport (see the label on the styrofoam packaging)!

Tighten the strap only loosely. Do not stretch!

– Pull the carrying handles **B** out of their holders and insert them through the drillings of the wooden support **C** from the back.

– Insert screws **D** through the drillings **E** into the drillings of the carrying handles to attach them firmly. Long or short.

IMPORTANT

The carrying handles have rims which prevent them from slipping out of the holes.

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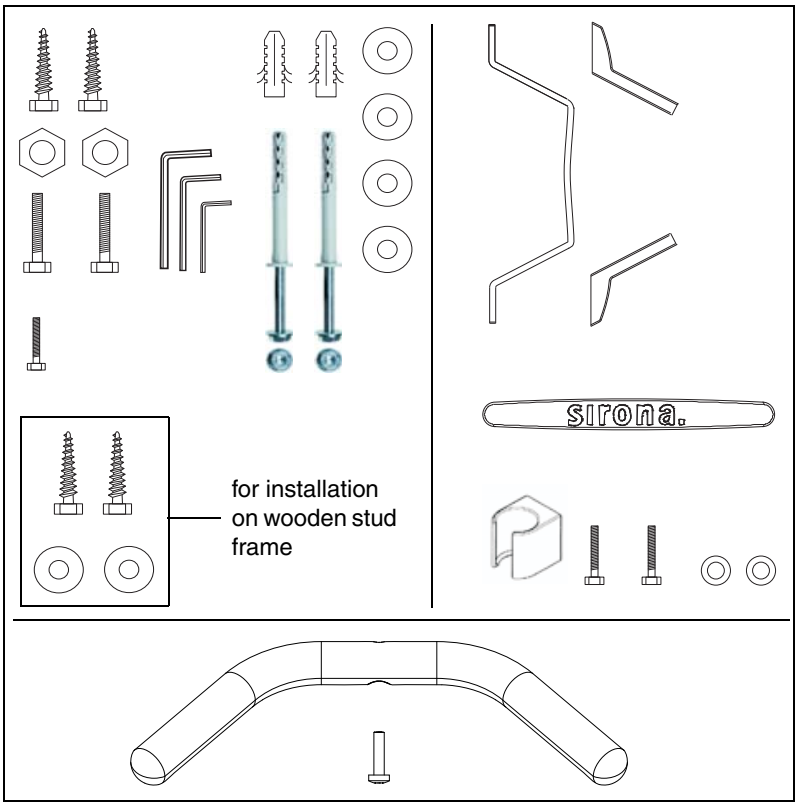
3 Installation: Panoramic X-ray unit

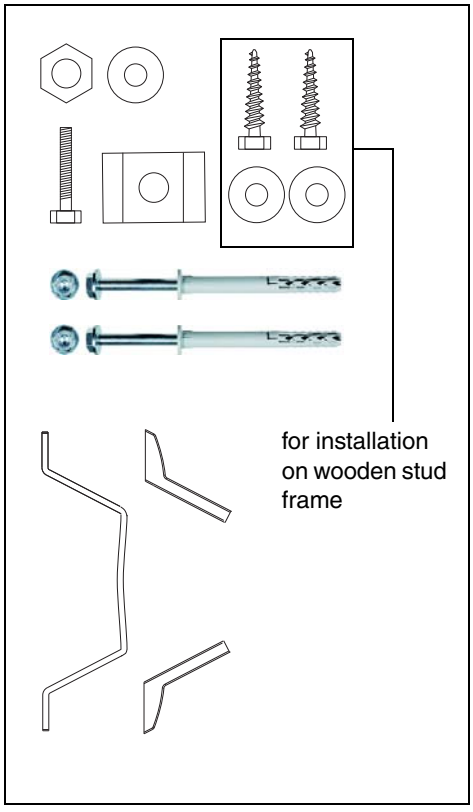
ORTHOPHOS XG 3

3.1 Installation material

1.



2.



Standard version
(see Section 3.3)

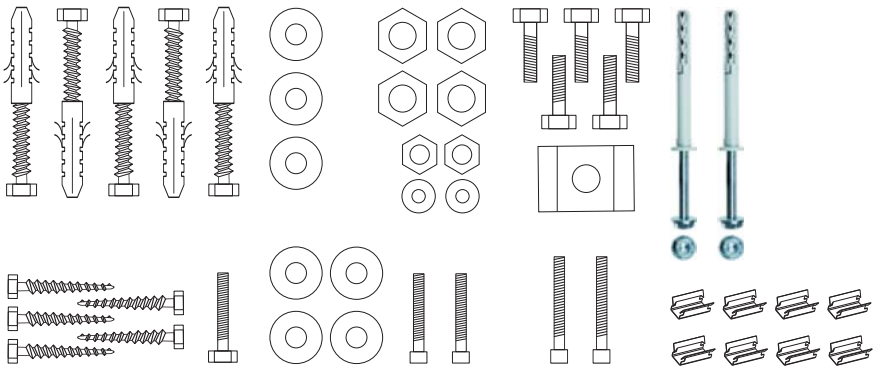
1. Wall/floor mounting
- Hexagon wood screws 8x80 (5/16x3"): 4 pc.
- Plastic wall plug S10: 2 pc.
- Screw M8x30: 2 pc.
- Washer δια. 8.4: 6 pc.
- Nut M8: 2 pc.
- Screw M4x10: 3 pc.
- Washer δια. 4.3: 2 pc.
- Mounting kit δια. 10 SXR: 2 pc.
- Torx offset screwdrivers TX10, TX20, TX25: resp. 1 pc.
- Offset Allen key (size 6): 1 pc.
- Wall holder: 1 pc.
- Cover for wall holder: 2 pc.
- Intermediate piece: 1 pc.
- Release button holder: 1 pc.
- Handle: 1 pc.
- Screw (for handle) M6x25: 1 pc.

Option 1: with second wall holder
(see Section 3.3)

2. Additional wall holder (for bottom wall mounting)
- Wall holder: 1 pc.
- Wood screws 8x80 (5/16x3"): 2 pc.
- Washer δια. 8.4: 3 pc.
- Hexagon head screw M8x50: 1 pc.
- Nut M8: 1 pc.
- Mounting kit δια. 10 SXR: 2 pc.
- Profile clamp: 1 pc.
- Cover for wall holder: 2 pc.

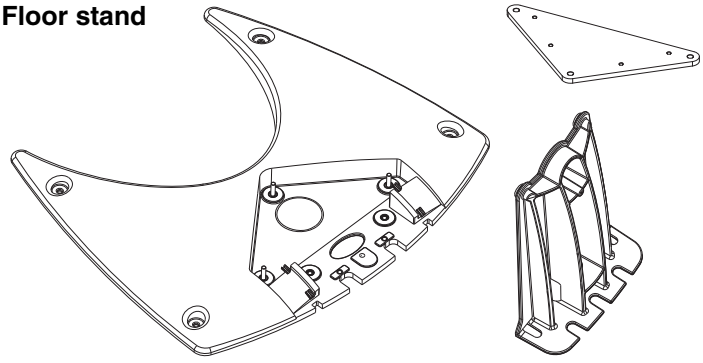
3.

Option 2

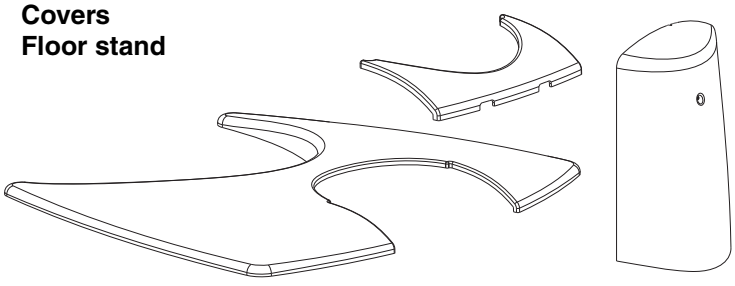


Mounting hardware

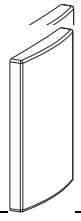
Floor stand



Covers
Floor stand



Cover
Slide

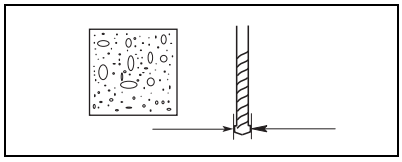


Option 2: Floor stand installation
(see Section 3.4)

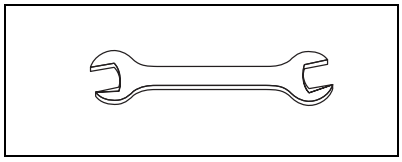
3. Floor stand installation
- Floor stand
- Floor stand covers
- Wood screws 10x160 (3/8x6"): 5 pc.
- Plastic wall plug S12: 5 pc.
- Screw EM8x60: 2 pc.
- Screw M8x80: 2 pc.
- Washer δια. 8.4: 2 pc.
- Nut M8: 2 pc.
- Screw M10x50: 1 pc.
- Profile clamp: 1 pc.
- Screw M5x12: 1 pc.
- Washer δια. 10.5: 13 pc.
- Nut M10: 4 pc.
- Spring steel clamp: 8 pc.
- Screw M10x25: 4 pc.
- Wood screw M10x80 (3/8x3): 5 pc.
- Mounting kit δια. 10 SXR: 2 pc.

3.2 Required tools

1.



4.



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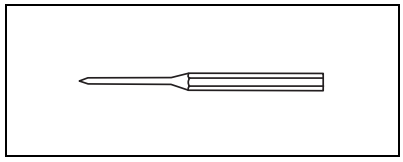

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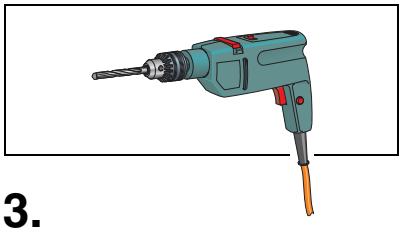

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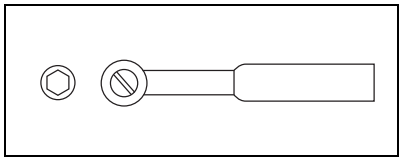

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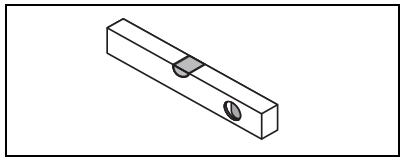

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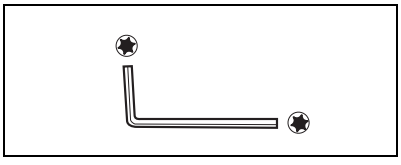

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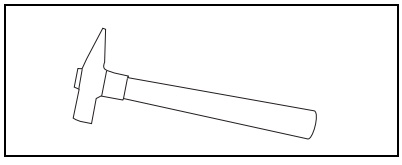

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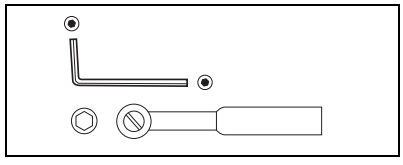


1. Masonry drill
- Δια.10mm (3/8“)

2. Impact drill or percussion drill

3. Torx offset screwdriver *
- TX10
- TX20
- TX25

4. Open-end wrench
- 13 mm A/F

5. Socket wrench
- Wrench insert 13

6. Hammer

7. Center punch

8. Spirit level

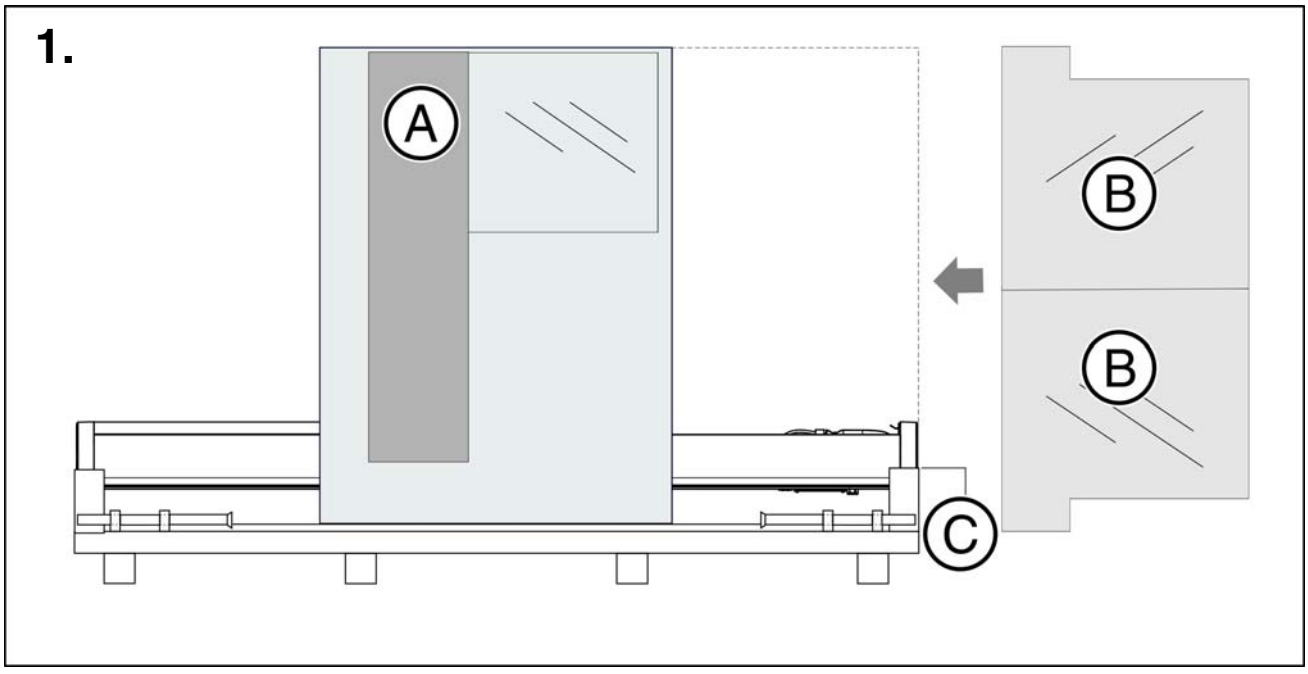
9. Additional requirements for installation with floor stand:
- Masonry drill δια.12mm (1/2“)
- Allen key 6 mm
- Socket wrench and extension
  Wrench insert 17

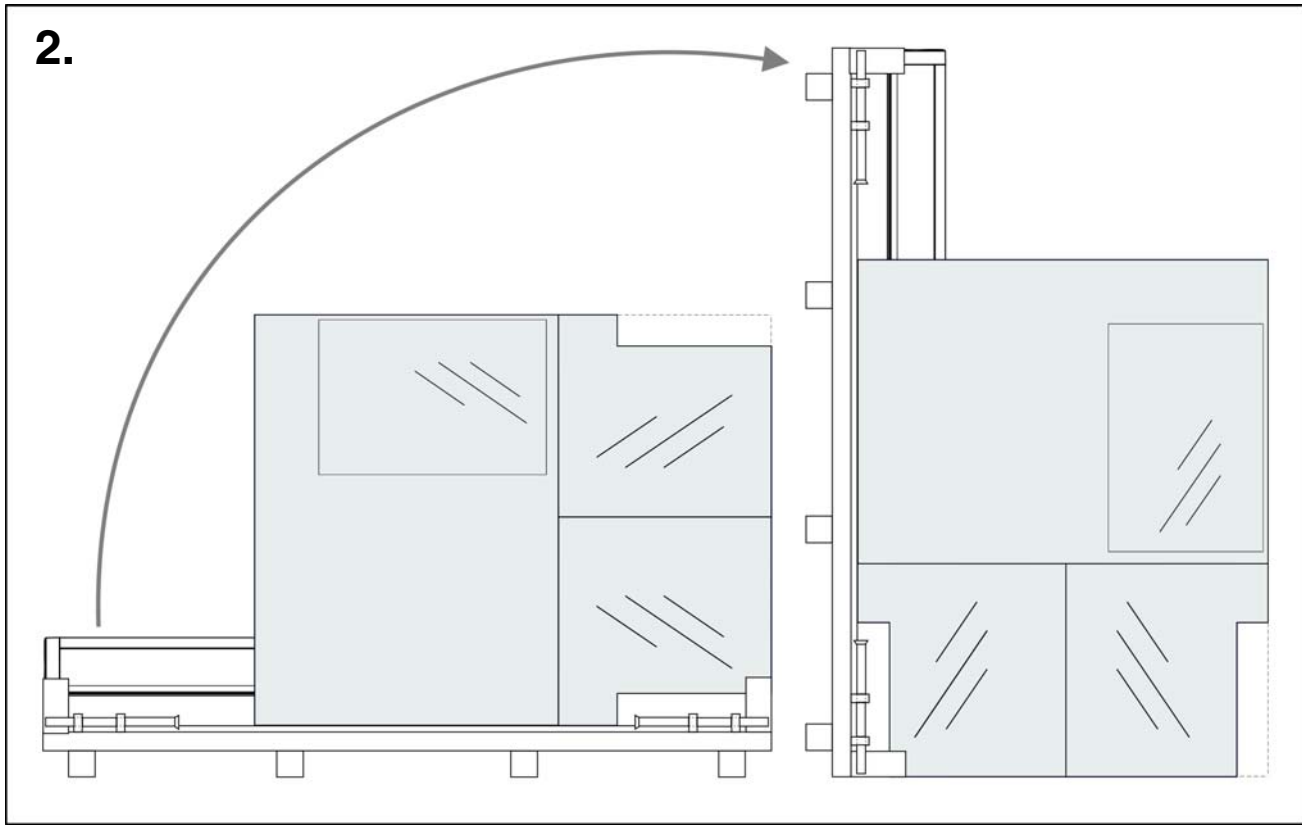
Required measuring instruments

- Multimeter or ammeter (battery-operated)
- **Test unit for device leakage current measurement**, e.g. Bender tester or line-frequency, high-resistance measurement voltage source (isolation transformer) and measuring circuit (MD) that meets the requirements of IEC 60 601-1.
- **Power source for protective ground wire test**
  Technical data:
  - No-load voltage **of at least 4 V** - **maximally 24 V**
  - Short-circuit current **at least 0.2 A**

* included in the scope of supply

3.3 Wall mounting (standard/option 1)





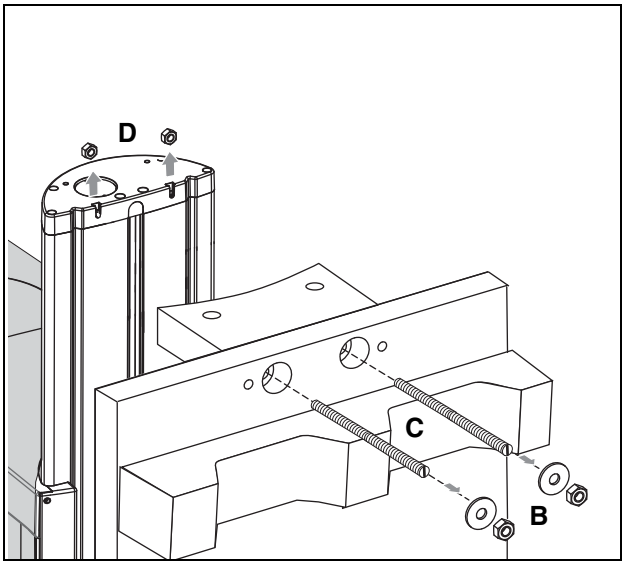
- Remove profile cover **A**.

1. Position the two installation aids **B** at the foot **C** of the device and secure their position with adhesive tape.
   CAUTION! The installation aids must be placed on top of each other in such a way that their openings lie on top of each other
2. Set up the unit. To do this, tilt the transport pallet upright.

IMPORTANT

If you have transported the unit on the wooden support without a pallet, set the unit upright with the wooden support. You can also use the lateral styrofoam packaging as a support with this variation.

3.



3. Loosen the nuts **B** (with washers) on both sides of the pallet (or the wooden support). Take off the pallet (or the wooden support).
   Remove the threaded bolts **C**.

CAUTION

*Remove the **lower bolts first**, followed by the upper bolts.*

IMPORTANT

*The nuts **D** on the unit may remain inside the unit when the threaded rods are removed. Remove the upper nuts. The lower nuts may remain in the unit.*

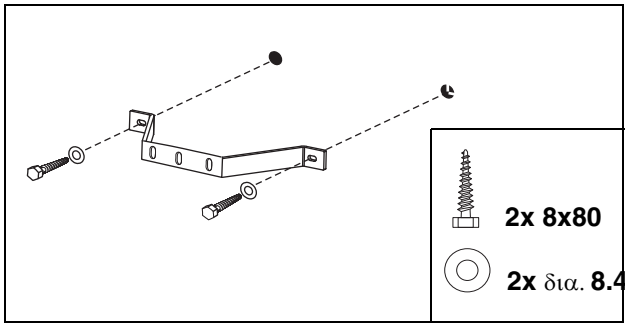
CAUTION

If the setup site for the unit is carpeted, the carpeting must be removed.

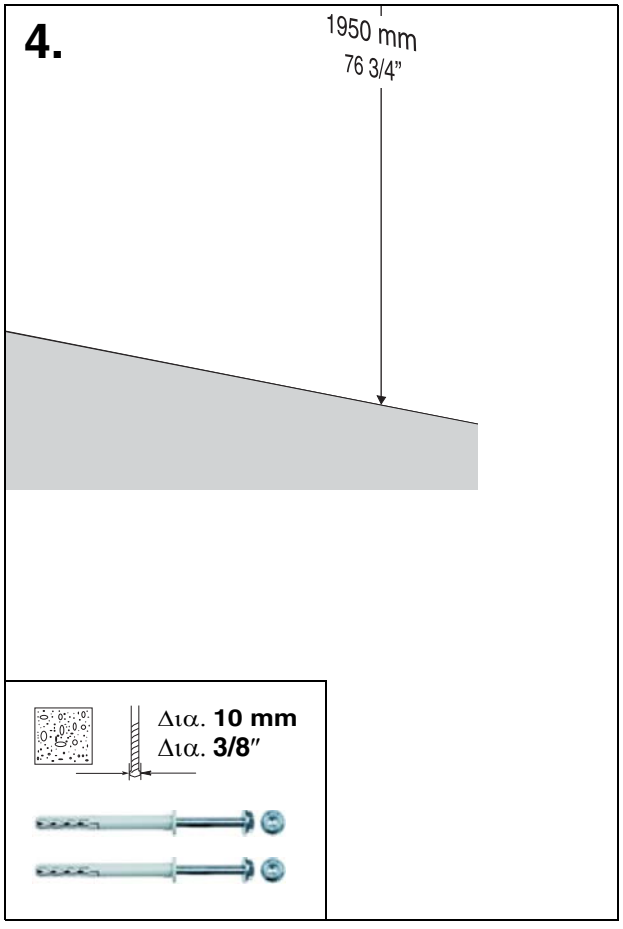
Wall plugs! Each wall plug must withstand an extraction force of 700 N.

The wall construction must be suitable for installation of the unit (see "On-site installation, dimensions, technical data")

In case of mounting on weight-bearing wooden constructions:
Use the enclosed wood screws and washers from the mounting kit for mounting the unit on weight-bearing wood structures.

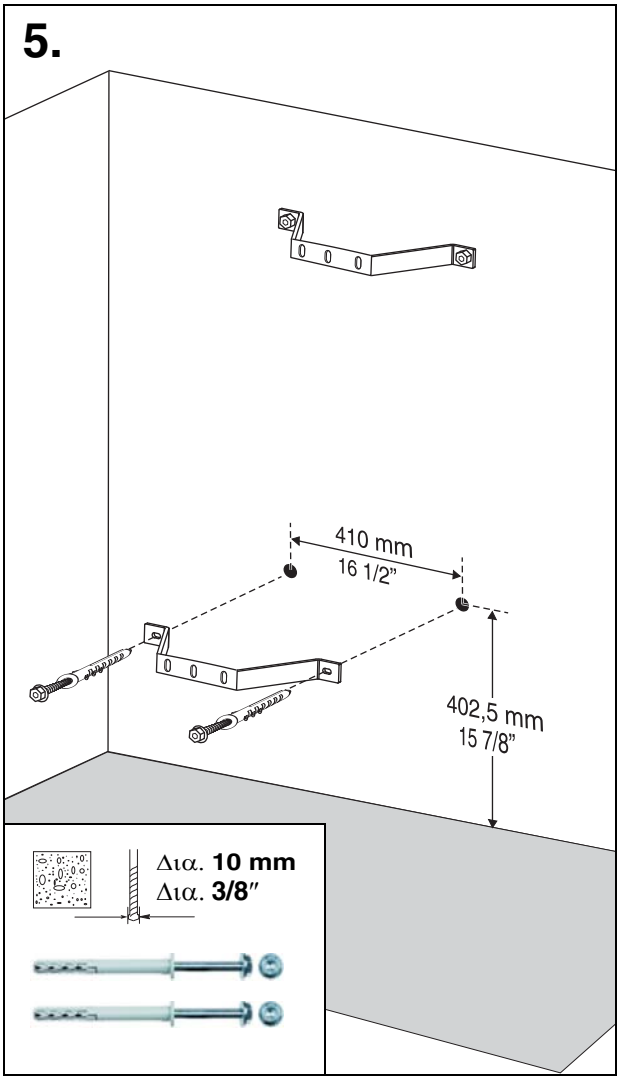


4. Mount the upper wall holder.



Only with second wall holder (option 1):

5. Mount the lower wall holder.



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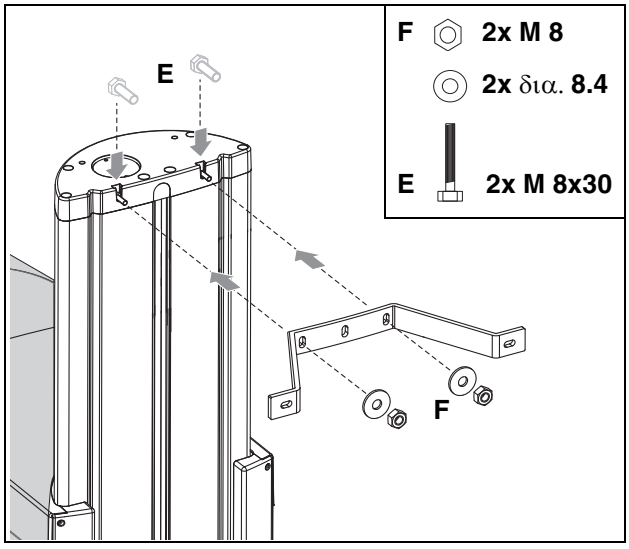

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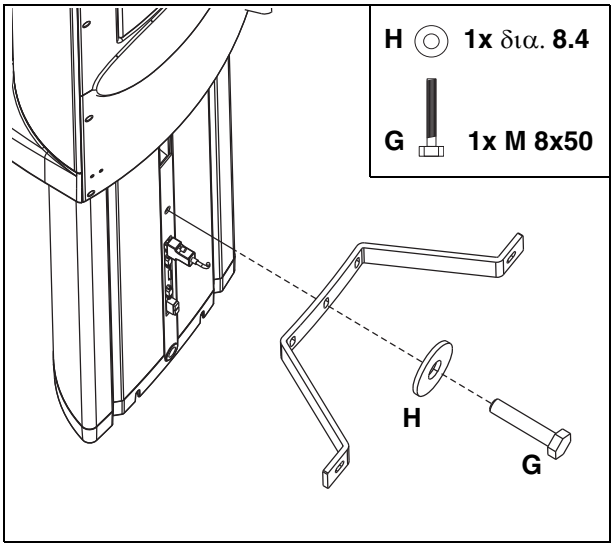


- Move the panoramic X-ray unit into its installation position at the wall. Hold the unit laterally at the styrofoam packaging to do this.

NOTICE

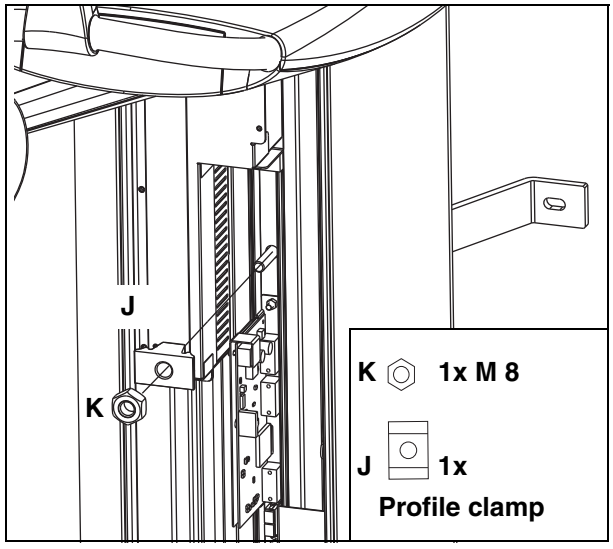
SIRONA recommends leaving the styrofoam packaging on the unit during the entire installation procedure!
*If due to on-site conditions it is unavoidable to remove the styrofoam packaging already at this point, you may move the unit by **carefully** grasping the bite block bar and the stand.*

6. Fasten the panoramic X-ray unit to the upper wall holder.
- Insert the screws **E** into the groove.
- Screw the panoramic X-ray unit firmly onto the wall holder using the washers and nuts **F**.

IMPORTANT

The wall holder must be flush with the upper edge of the unit.

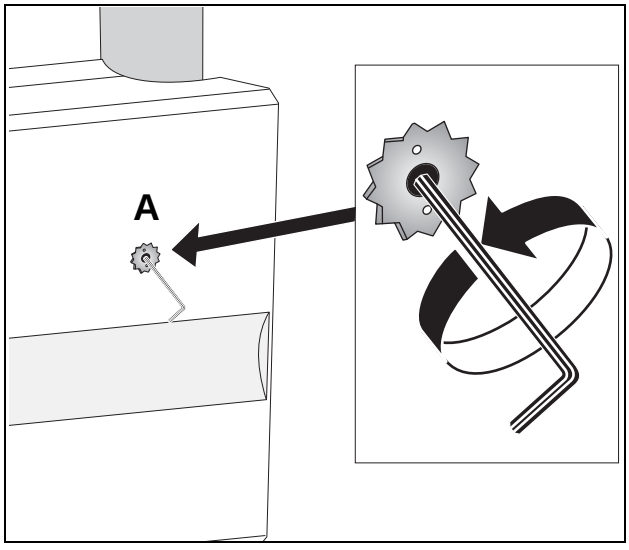
8.



7. Insert screw **G** through washer **H** and then through the wall holder and into the stand from the rear.

8. Fit profile clamp **J** onto screw **G** from the other (front) side and screw nut **K** onto the screw.
Tighten nut **K** firmly.

9.



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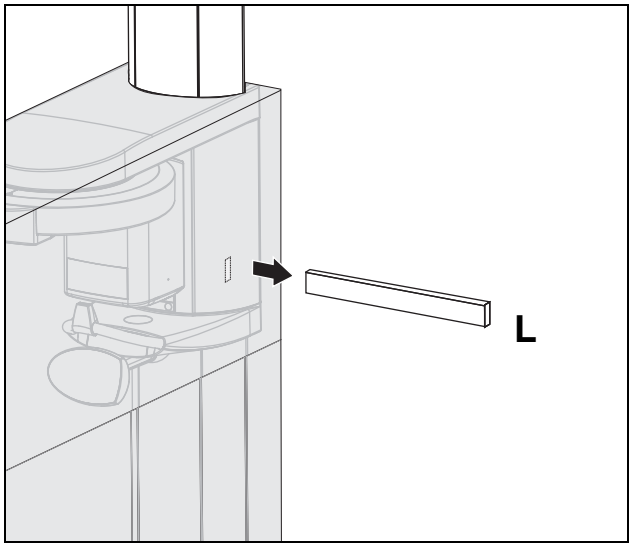
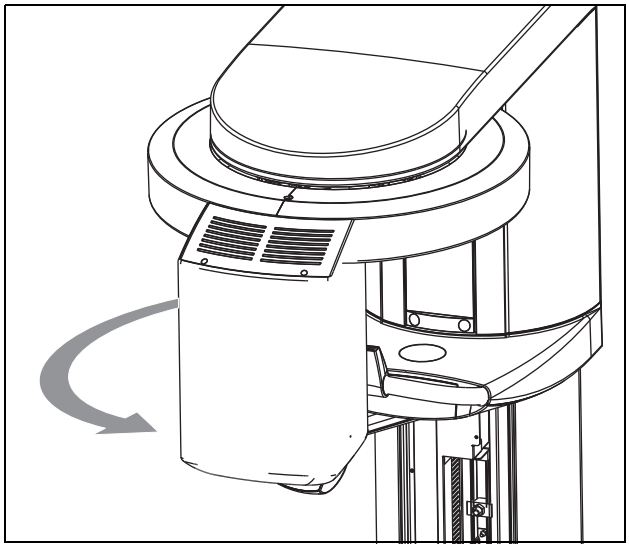
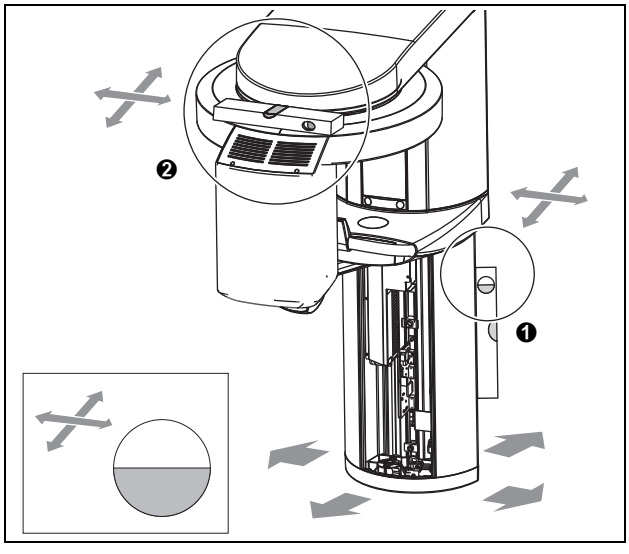


11.



12.



9. Remove the transport safety device (**A**) prior to unit startup.

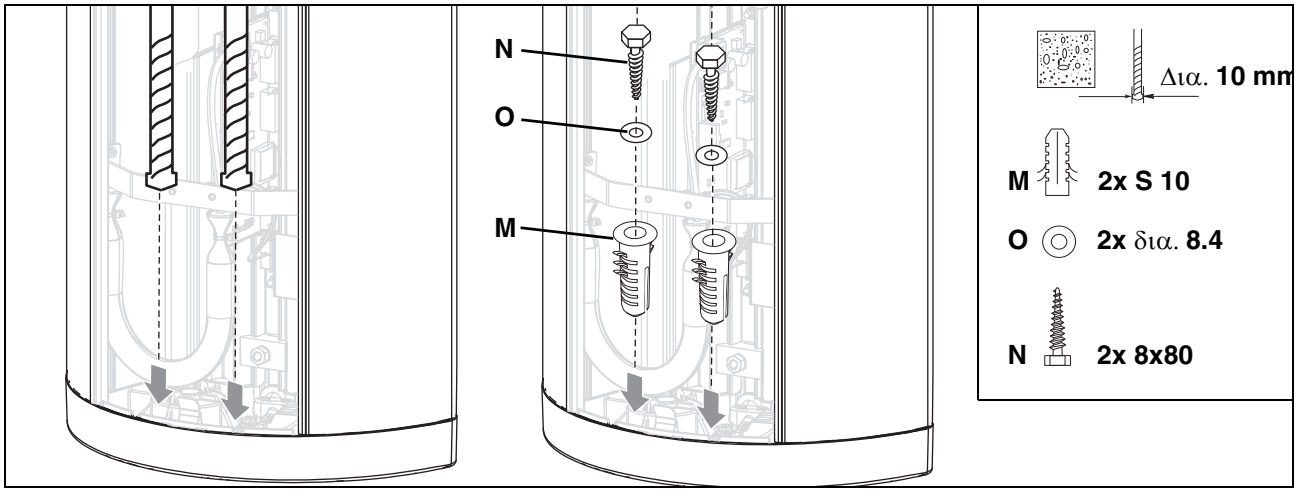
10. Pull the wooden board **L** out of the styrofoam packaging and remove all styrofoam packaging.

11. Rotate the X-ray tube assembly counterclockwise to the front side of the unit.

12. Level the unit by moving the unit base in both directions while measuring with the spirit level.

- Align the **stand first** by placing the spirit level against the side and rear of the stand ❶ .
- Then align the **ring with the spirit level** in both directions by placing the spirit level on the ring ❷ .

13.



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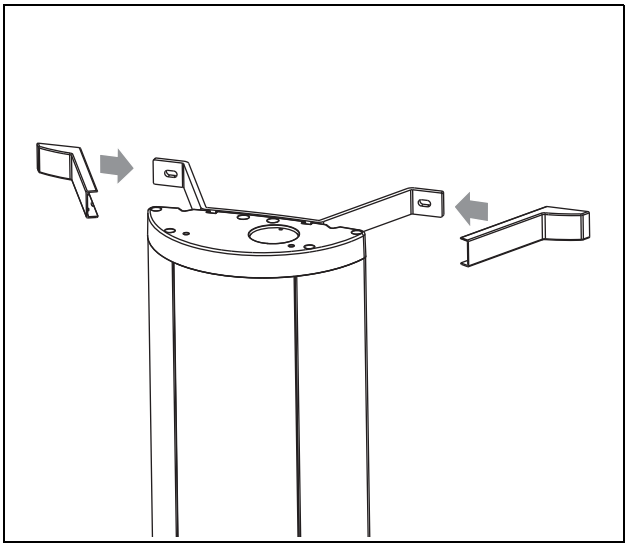


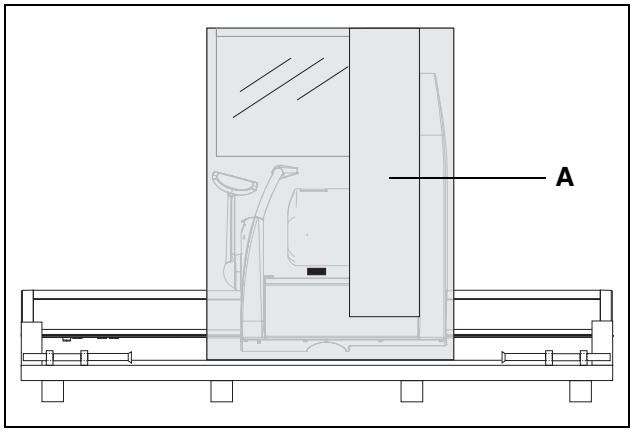
13. Drill through the recesses of the stand into the floor. Insert wall plug **M**, and check again that the stand is aligned correctly (see step 10).

Screw the stand to the floor with the two wood screws **N** and the washers **O**.

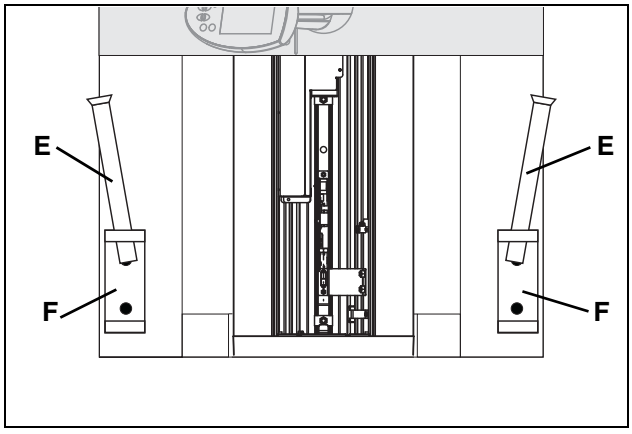
14. Attach the covers of the wall holder(s).

3.4 Installing the floor stand (option 2)

1.



3.



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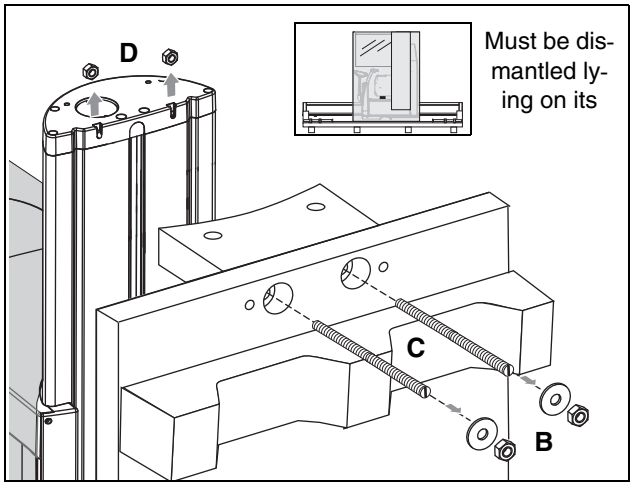
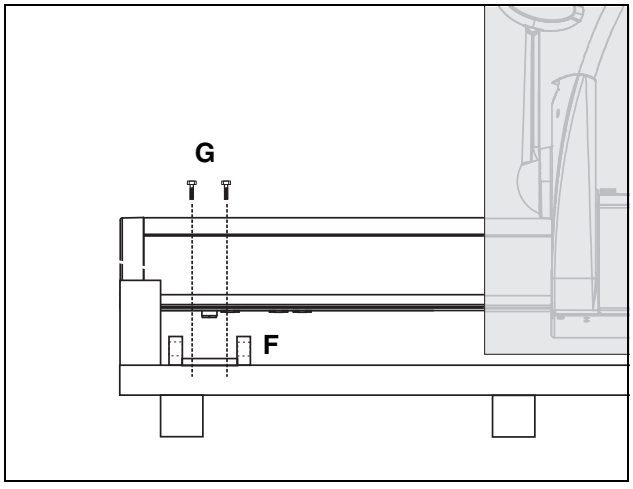


4.



CAUTION

For installation with the floor stand, the unit remains lying on the pallet until the floor stand has been completely assembled. Only then may the unit be installed. For enhanced representation, some of the following drawings are shown in the standing state.

1. Remove the surrounding packaging, the two lateral styrofoam parts and profile cover **A**.

NOTICE

The center styrofoam part should remain attached to the unit for protection.

2. Loosen the nuts **B** (with washers) on both sides of the pallet (or the wooden support). Take off the pallet (or the wooden support). Remove the threaded bolt **C**.

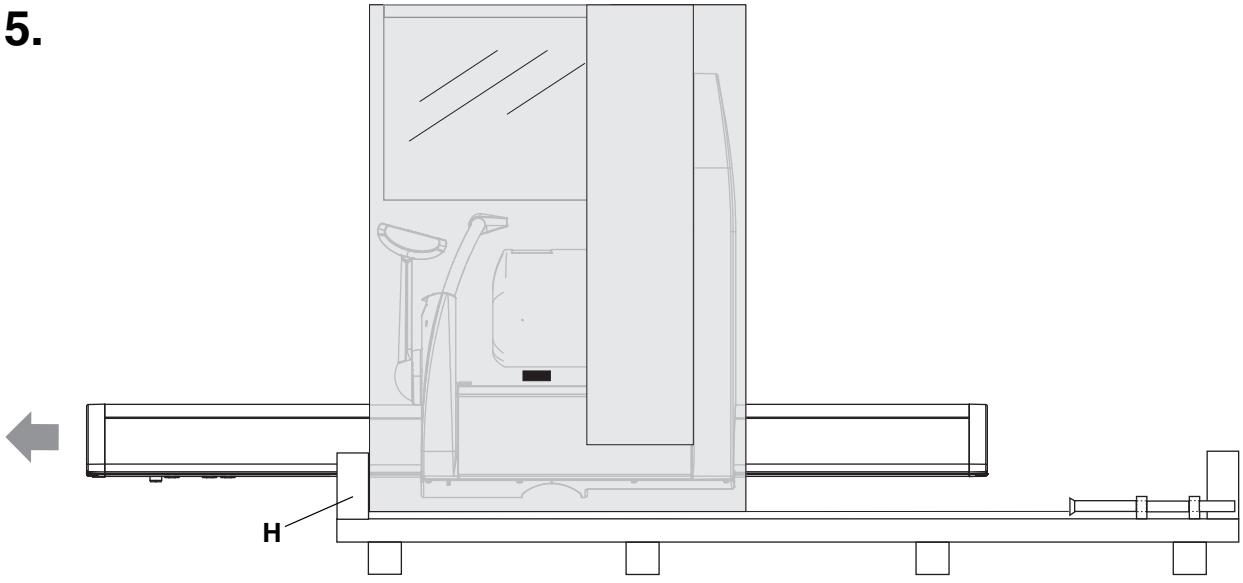
IMPORTANT

*The nuts **D** on the unit may remain inside the unit when the threaded rods are removed. Remove the nuts.*

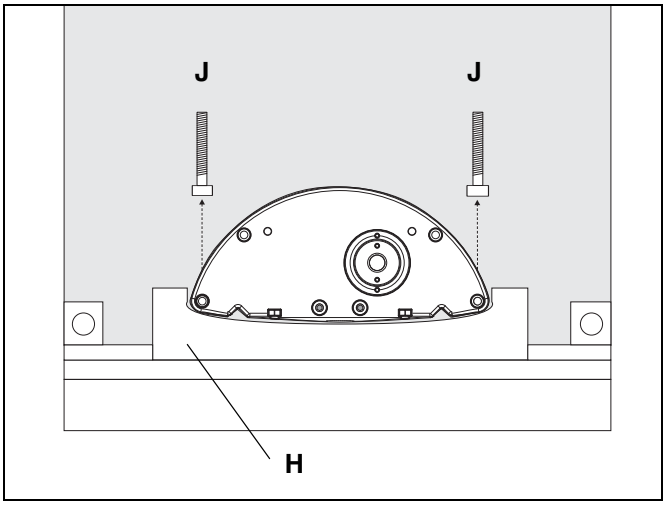
3. Remove the carrying handles **E** on the lower side of the pallet from the holders **F**.

4. Loosen screws **G** and remove the holders **F**.

5.



6.



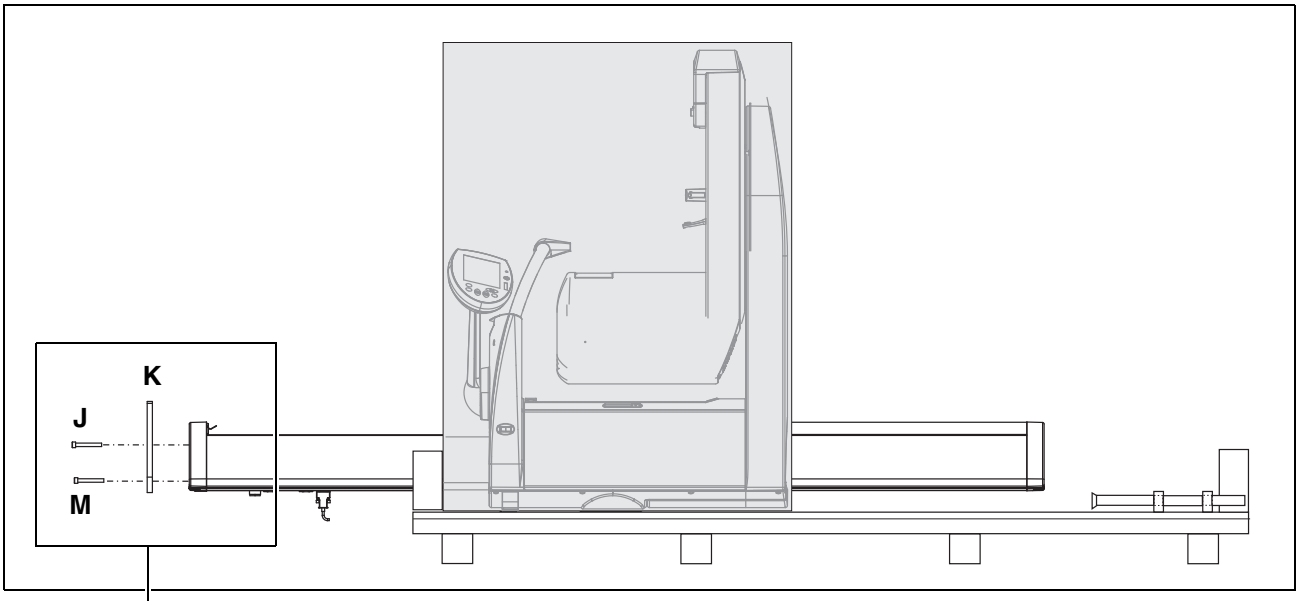
5. Carefully push the unit toward the base just far enough so that the center styrofoam part nudges lower supporting block **H**.

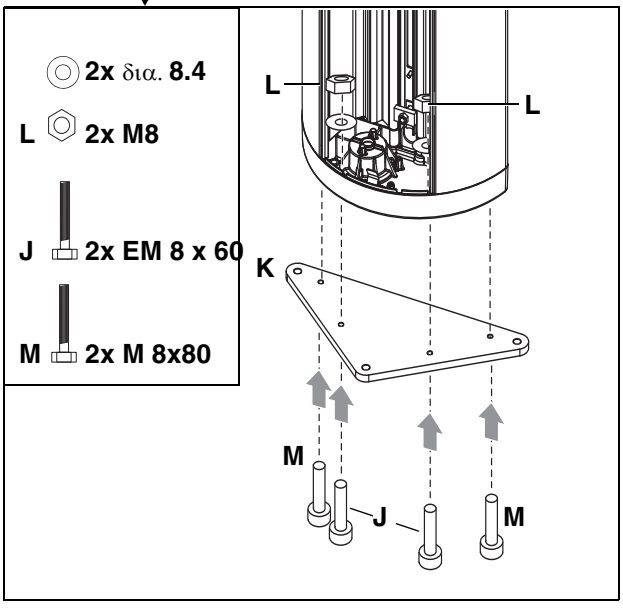
NOTICE

*Make absolutely sure that the interfaces do not have firm contact with supporting block **H** and are not damaged when you push the unit.*

6. Remove the two screws **J** from the bottom of the stand.

7.





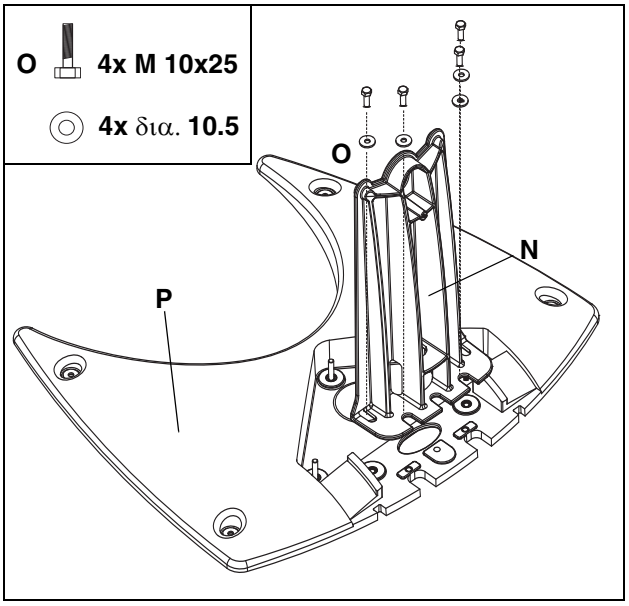
7. Screw adjustment plate **(K)** onto the stand firmly.

IMPORTANT

*To do this, use screws **J** for the two front holes and secure them with the corresponding nuts **L** and washers (from the installation material). Use two new screws **M** for the rear holes.*

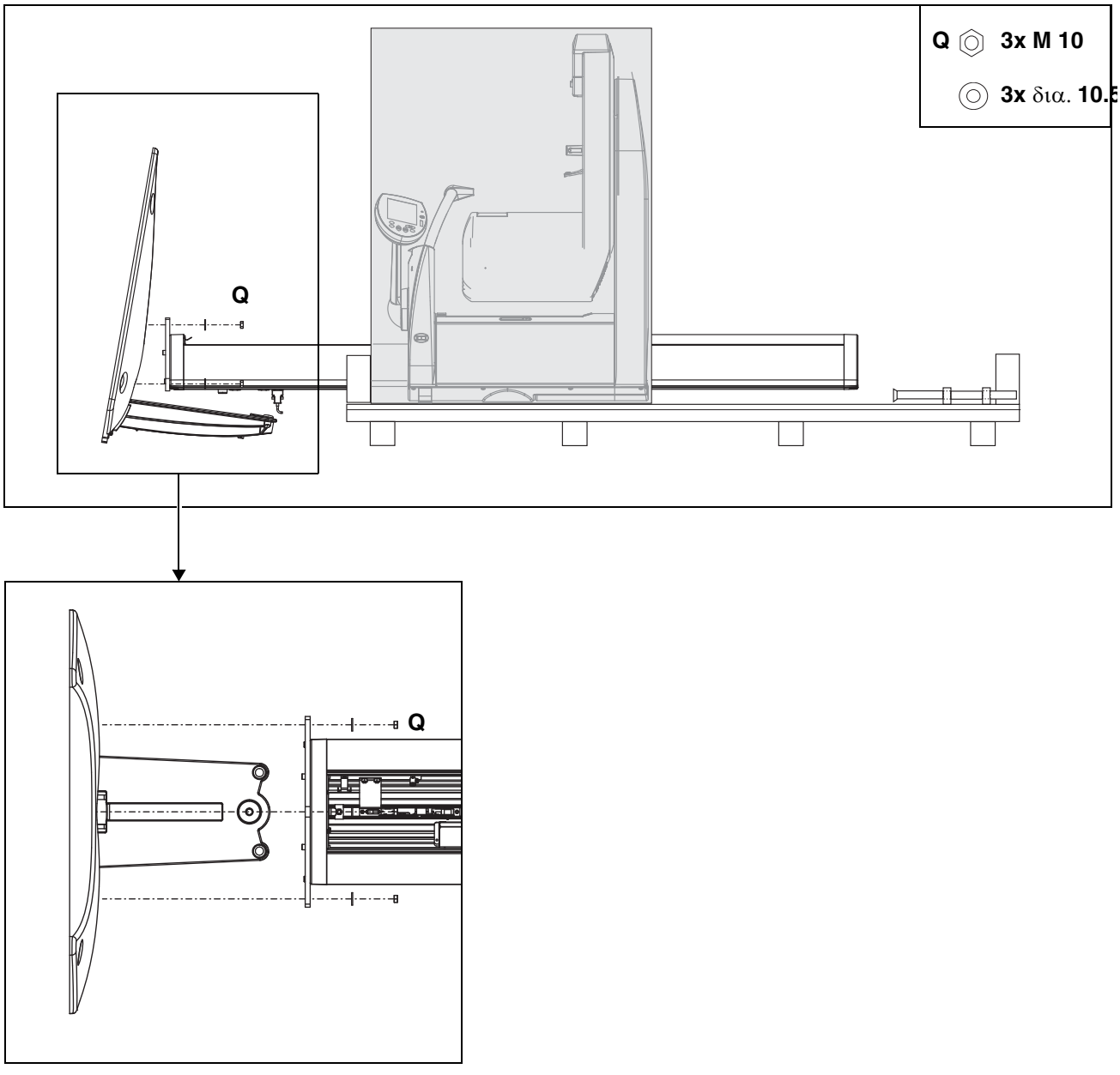
The recessed drill holes of the adjustment plate must point downward.

8.



8. Screw the support **N** firmly onto the base plate **P** using the 4 screws **O** and washers.

9.

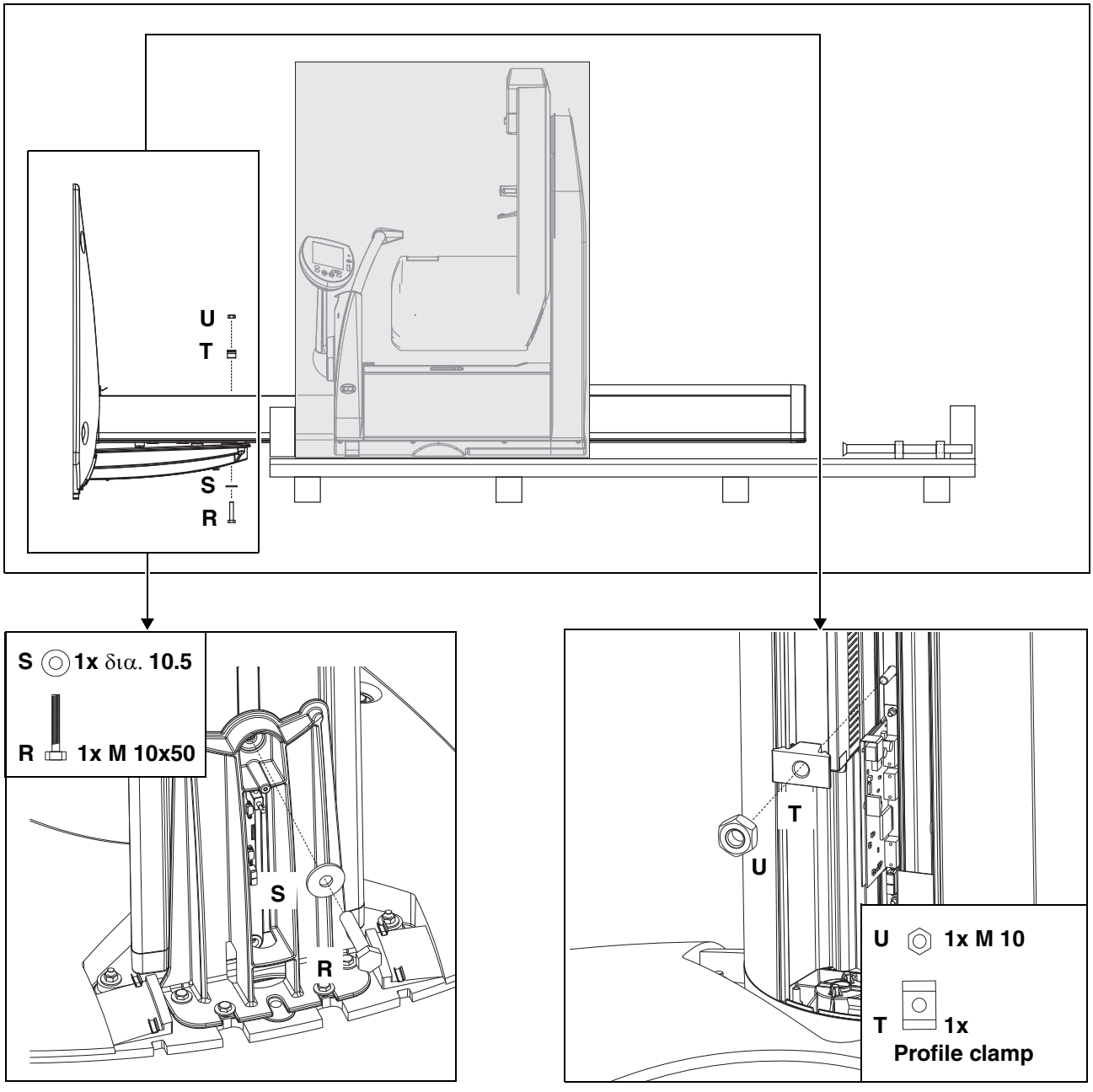


9. Position the base plate with the threaded bolts (including the mounted support) on the adjustment plate and attach the base plate **loosely** with the 3 adjustment nuts **Q** (and washers).

NOTICE

Make sure that the cables are fed through the support correctly and are not crushed.

10. + 11.

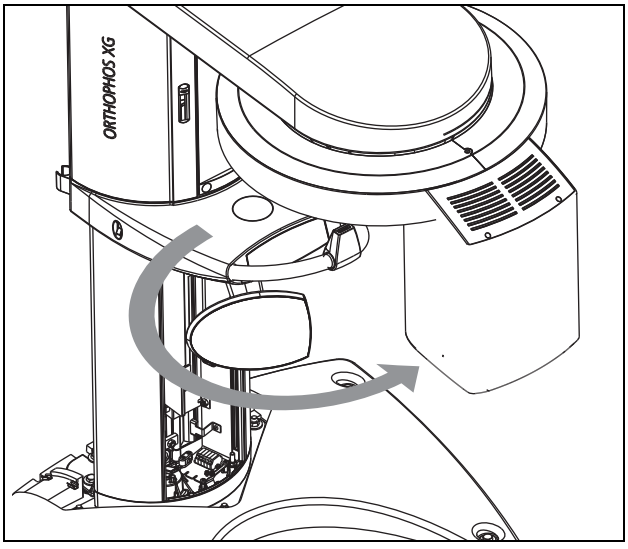


10. Insert screw **R** through washer **S** and then through the support and into the stand from behind.

11. Fit profile clamp **T** onto screw **R** from the other (front) side and screw nut **U** onto screw **R**.

- Tighten adjusting nuts **Q** (see page 33) and screw **R** firmly.

12.



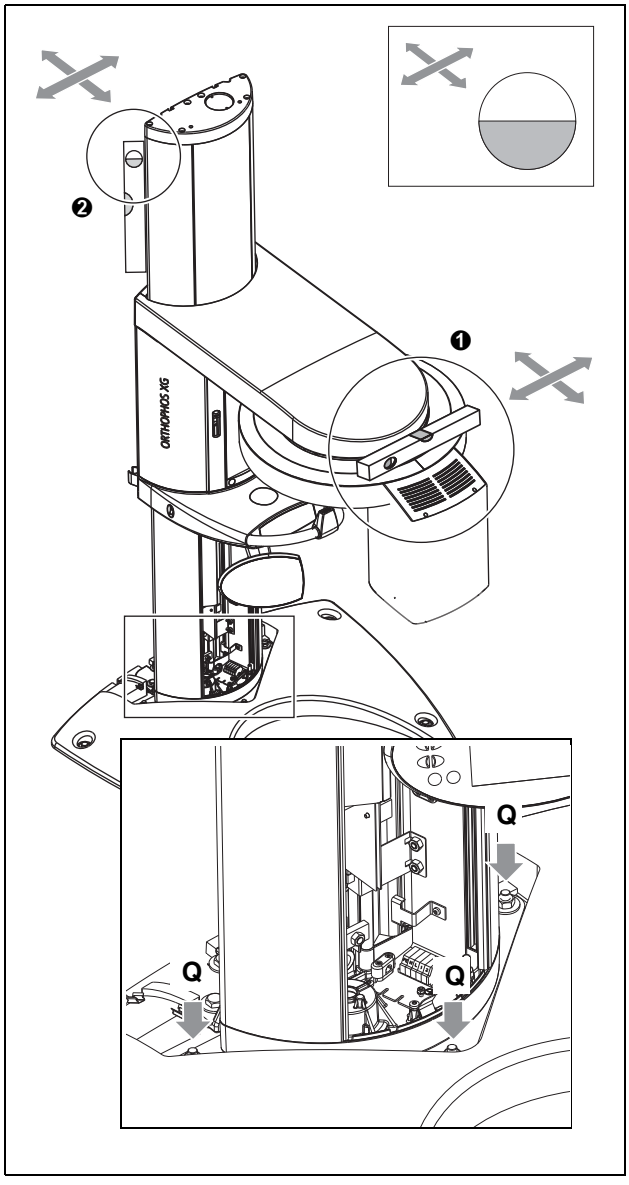
- Set up the unit including the center styrofoam part.

IMPORTANT

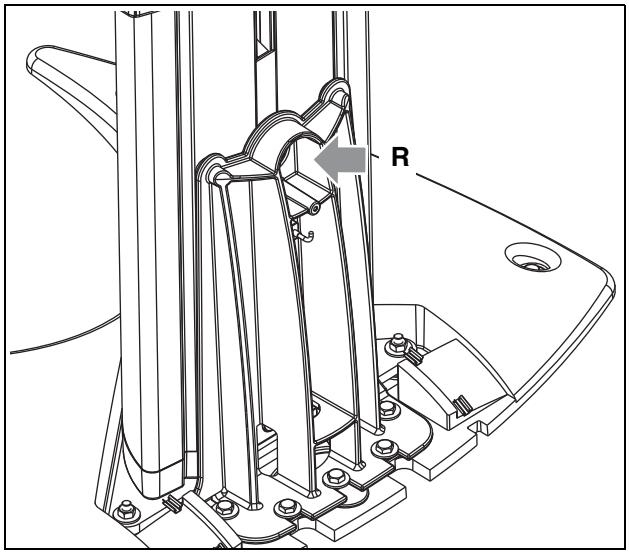
Please observe the required movement range of the X-ray unit during installation (see section 1.6).

12. Remove the styrofoam packaging and rotate the X-ray tube assembly counterclockwise to the front side of the unit.

13.



14.



- Loosen screw **R** and adjusting nuts **Q** again slightly.

13. Level the unit in both directions by turning adjusting nuts **Q** while measuring with the spirit level.

- Align the **stand first** by placing the spirit level against the side and rear of the stand ❶ .
- Then align the **ring with the spirit level**in both directions ❷ by placing the spirit level on the ring.

IMPORTANT

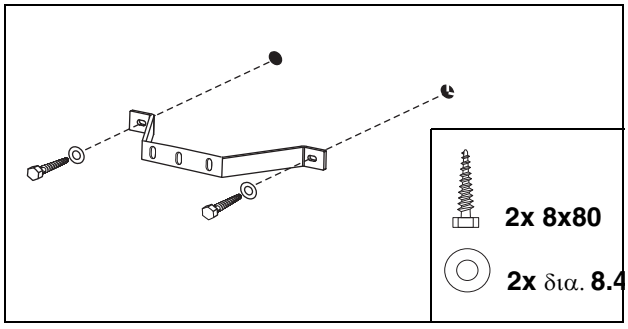
Be sure to tighten all adjusting nuts equally (to the same torque) after leveling.

14. Tighten screws **R** again firmly.

CAUTION

In case of mounting on weight-bearing wood structures:

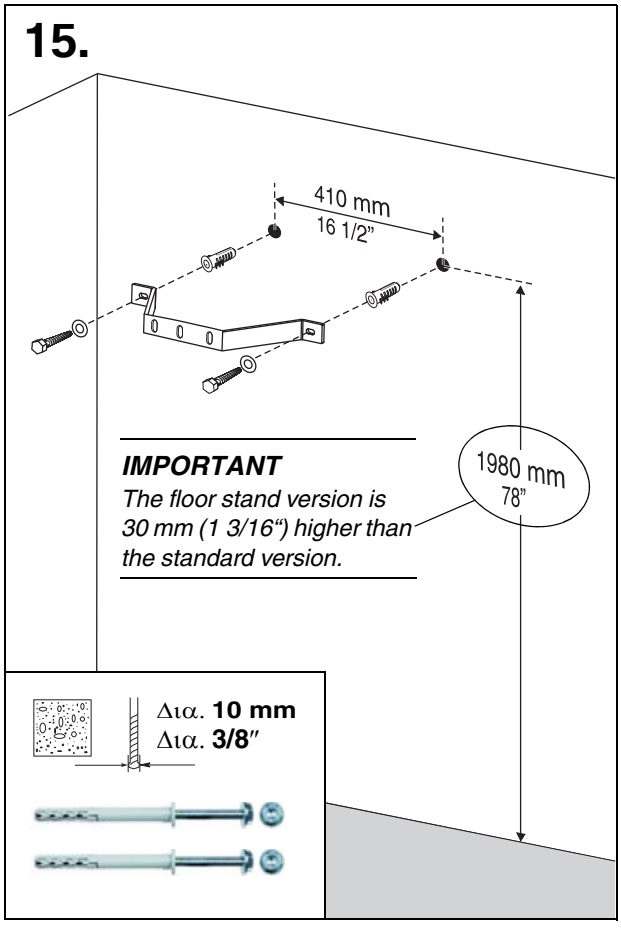
Use the enclosed wood screws and washers from the mounting kit for mounting the unit on weight-bearing wood structures.



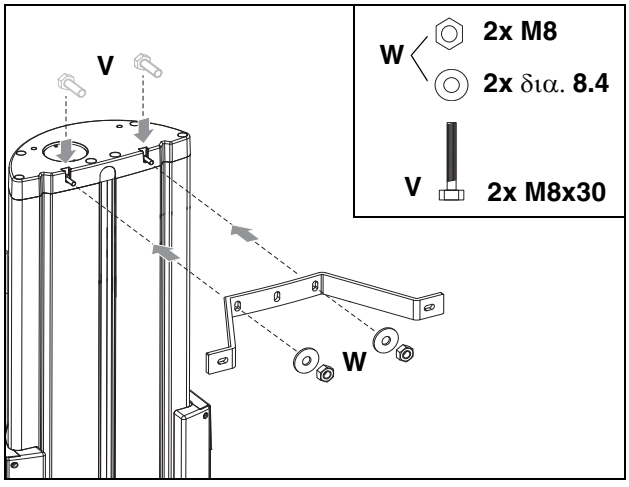
IMPORTANT

Even when the unit is installed using the floor stand it must be secured with the upper wall holder.

15. Mount the upper wall holder.



16.



- Slide the unit with the assembled floor stand up to the wall.

NOTICE

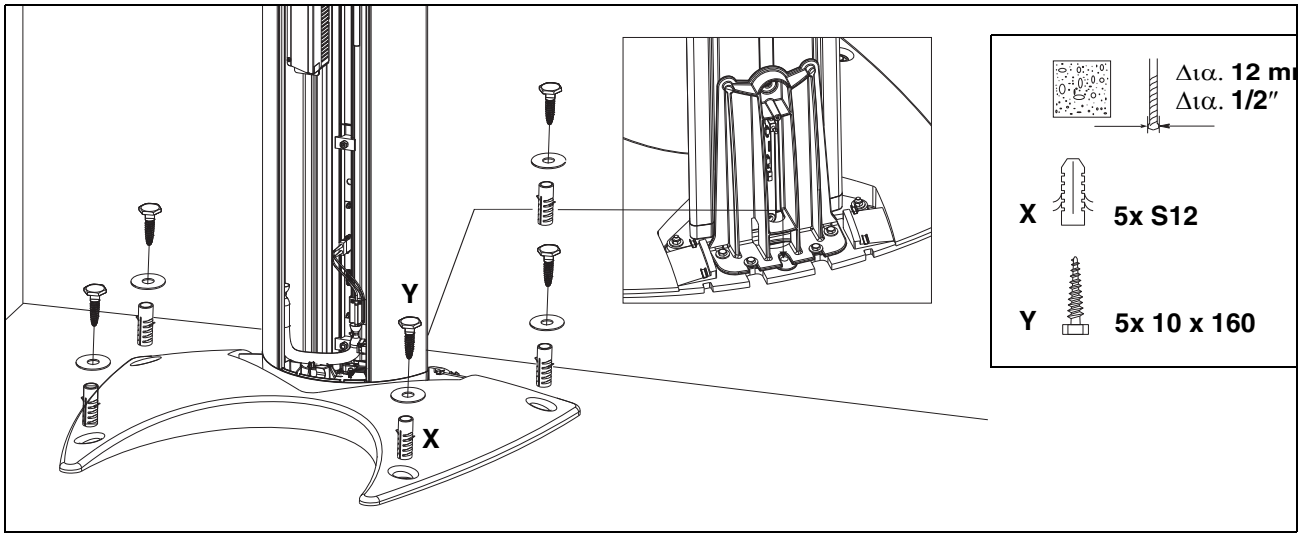
Please observe the required movement range of the unit during positioning (see section 1.2).

16. Mount the unit **loosely** on the upper wall holder.

– Insert the screws **V** into the groove.

– Screw the unit onto the wall holder **loosely** using nuts **W** (and washers). **Do not tighten the screws!**

17.



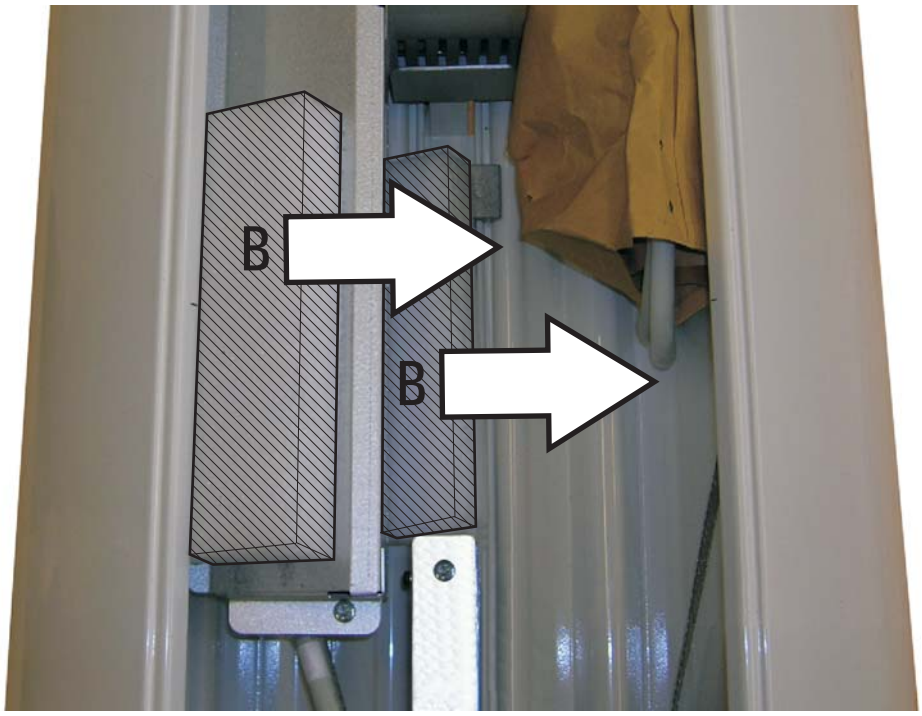
- Level the unit again in both directions with the help of the spirit level (see step 12.) and tighten the screws on the wall holder firmly.

17. Mount the unit onto the floor.

- Drill the fastening holes in the floor through the holes in the base plate.
- Remove the drilling dust with a vacuum cleaner.
- Slide wall plugs **(X)** through the base plate and into the drilled holes.
- Use the five screws **(Y)** (and washers) to screw the base plate firmly onto the floor.

3.5 Removing the transport safety device

1.



1. Remove the transport safety devices **B** prior to unit startup.

IMPORTANT

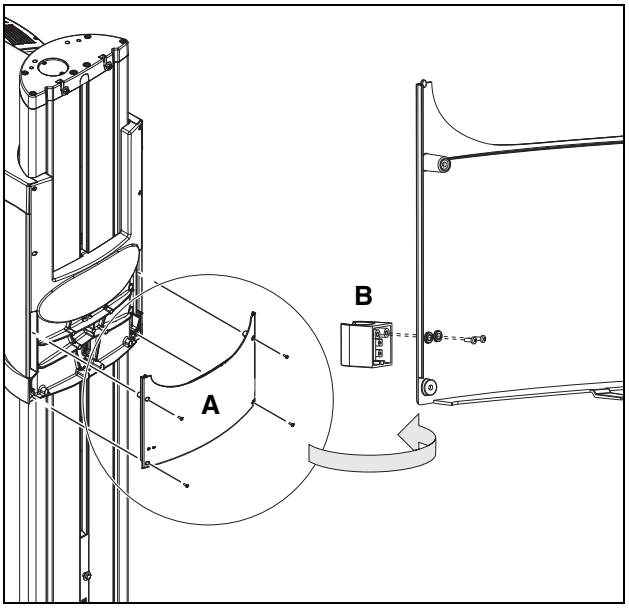
*Keep transport safety devices **B** in a safe place. You will need them should the unit be moved again.*

3.6 Installing the release button holder

IMPORTANT

Only install the holder to the unit if you do ***not intend to use a remote control****! If you use a remote control in combination with the release button, attach the holder to the remote control (see page 49).*

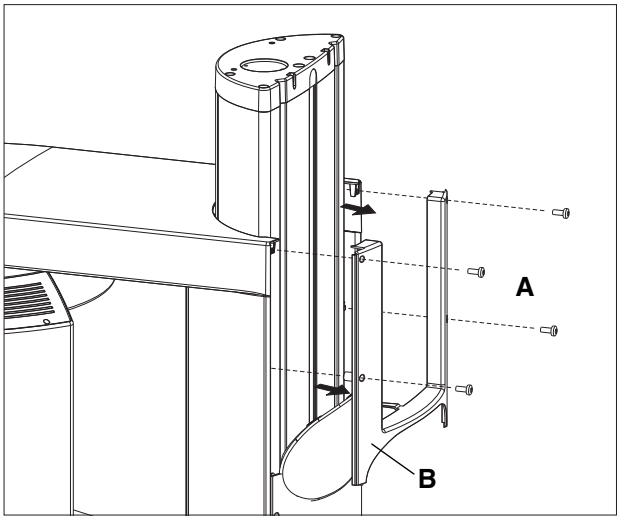
1.



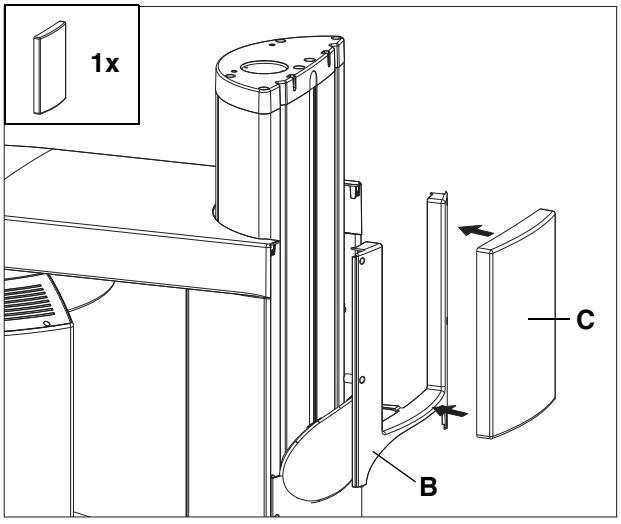
1. Unscrew and remove cover **A**.
Attach holder **B** and screw the cover back onto the unit.

3.7 Attaching the covers

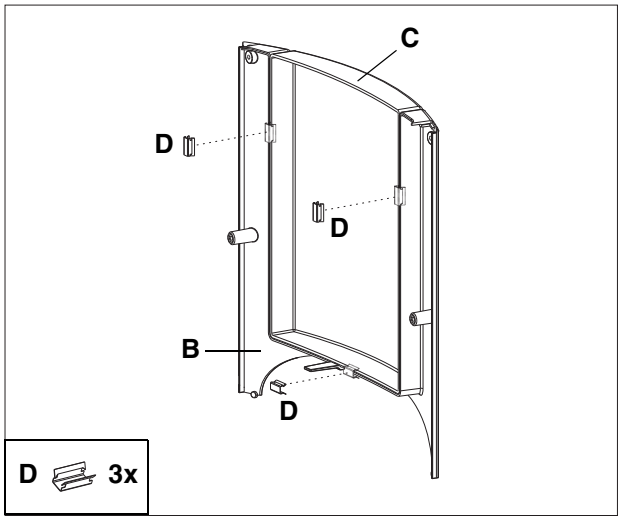
1.



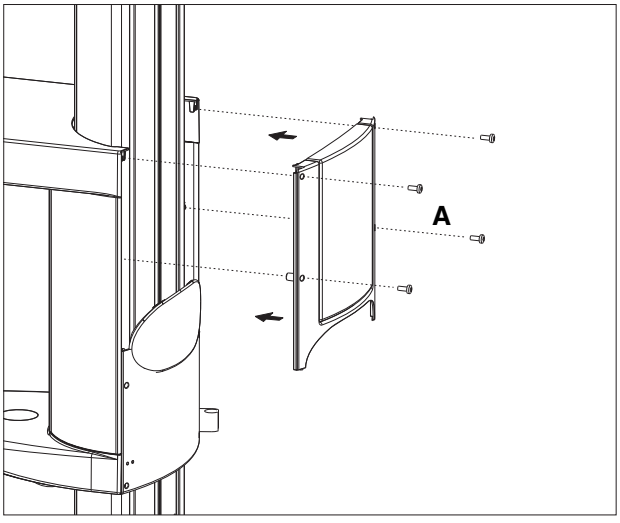
2.



3.



4.

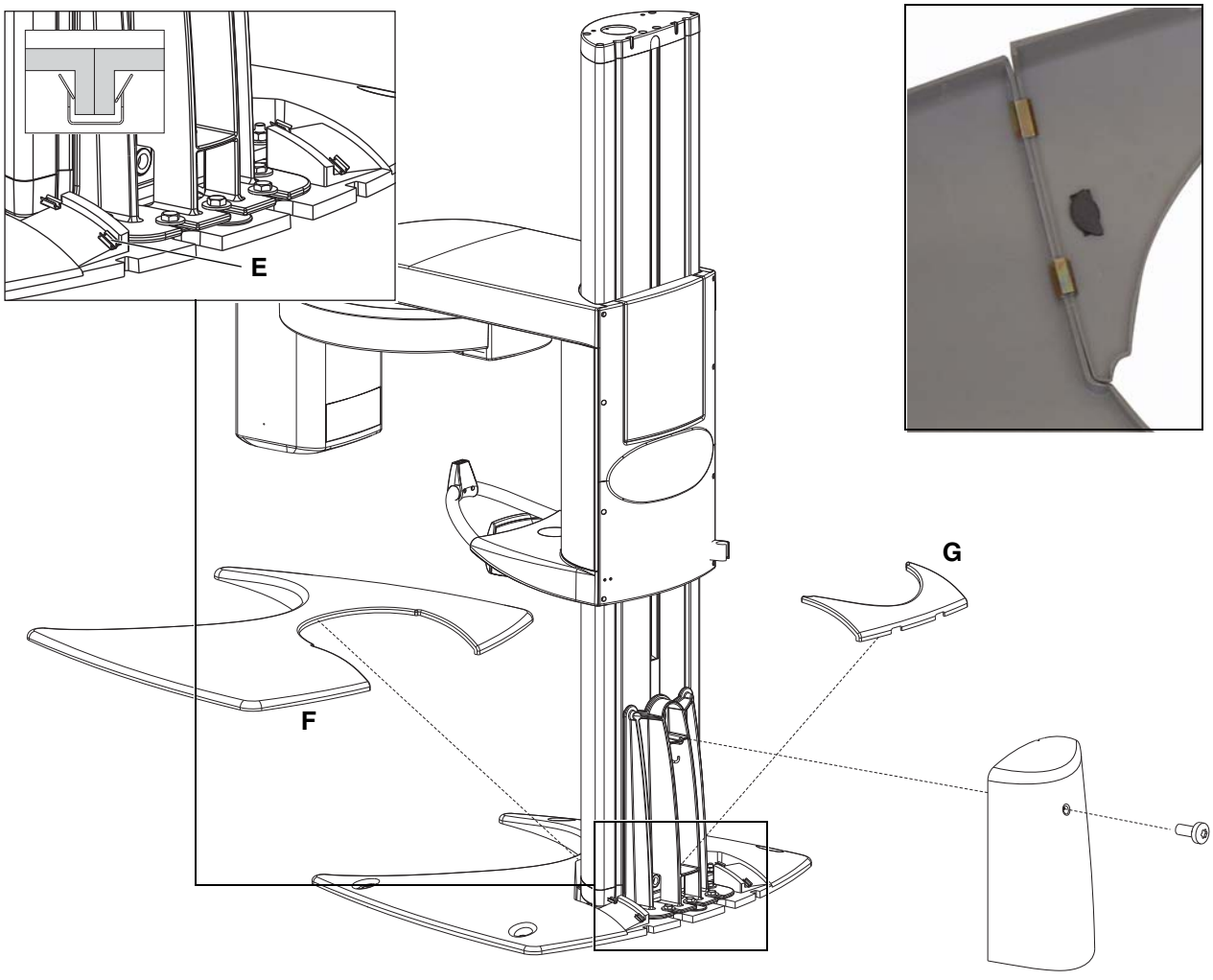


IMPORTANT

These covers must be attached only if the unit is installed with the floor stand and does not stand against a wall.

1. Loosen the 4 screws **A** on the upper housing cover **B** and remove this housing cover toward the rear.
2. Insert the cover **C** included in the floor stand accessories in the outer cover **B**.
3. Fasten the cover **C** to the cover **B** with the 3 spring steel clamps **D**.
4. Use the 4 screws **A** to refasten the assembled housing cover to the unit.

5.



5. Attach all remaining unit housing covers.

IMPORTANT

*In order to attach the floor stand covers properly, the four spring clamps **E** must be placed on the base plate in such a way that the two covers **F** and **G** remain assembled after they are attached (see detail drawing above).*

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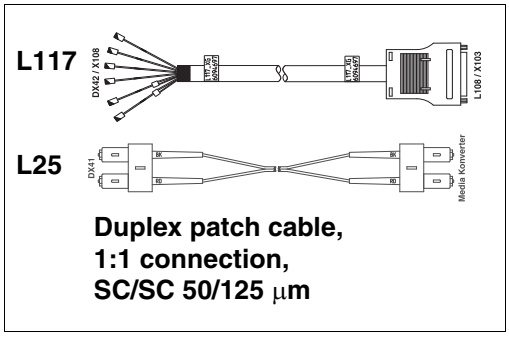
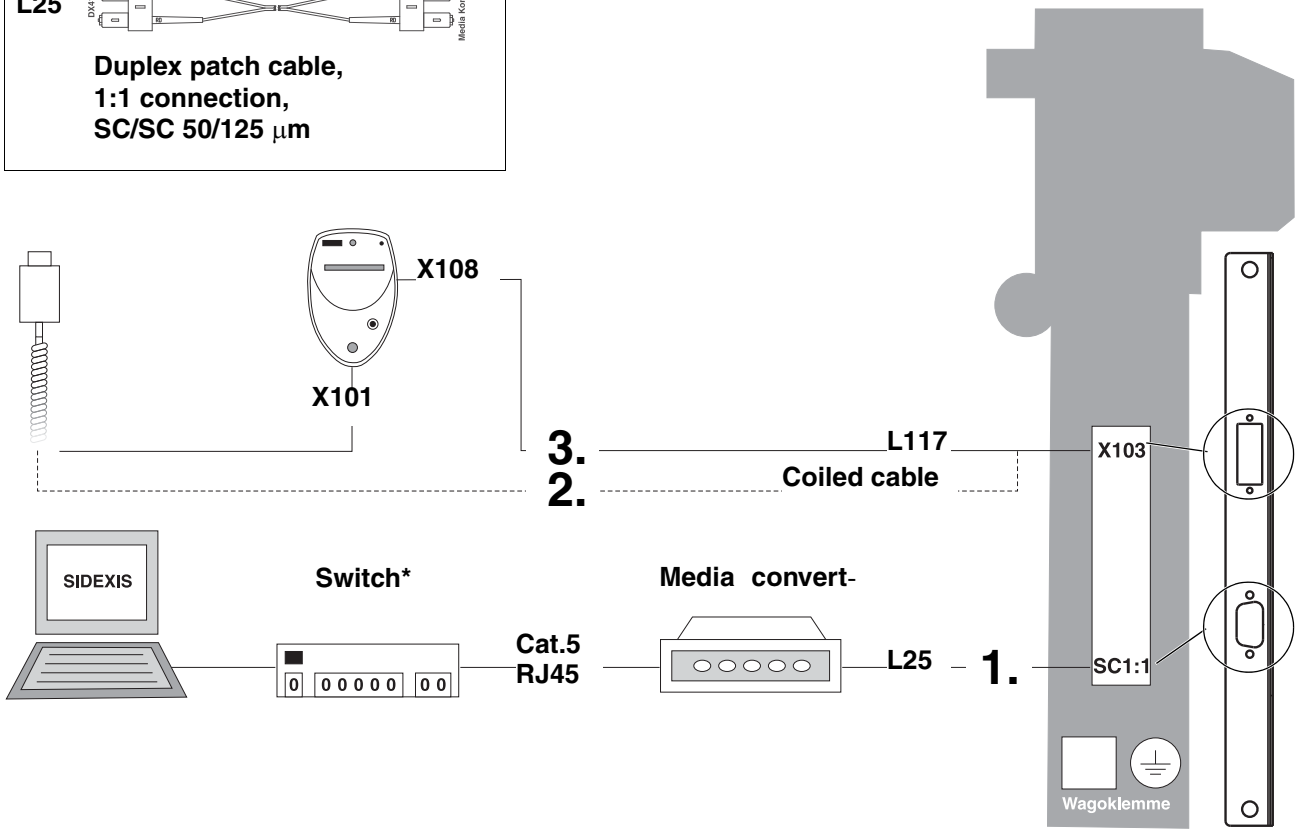
4 Electrical connection

ORTHOPHOS XG 3

4.1 Connecting the control cables (PAN)





1. Connect the personal computer to socket **SC:SC** of the panoramic X-ray unit via the media converter (see the Operating Instructions supplied with the media converter).
- Install the media converter at a suitable location using fastening screws or the Velcro strap supplied for this purpose.

NOTICE
*Do **not** fasten the media converter to the X-ray unit.*

*) not included in the scope of supply

For the installation version without remote control

2. Connect the coiled cable of the release button to socket **X103** of the panoramic X-ray unit.

For the installation version with remote control

3. Connect the remote control to socket **X103** of the panoramic X-ray unit with cable L117.
Secure the connector on socket X103.

4.2 Connecting the line voltage

DANGER

Fixed connection!
The installation of a power plug instead of the prescribed fixed (hard-wired) connection violates international medical regulations and is prohibited.
In case of a fault, you would thus endanger the life and limb of the patient, the operator or other persons.

DANGER

Danger of electrical shock!
Be sure to switch off the line power supply before connecting the line voltage!

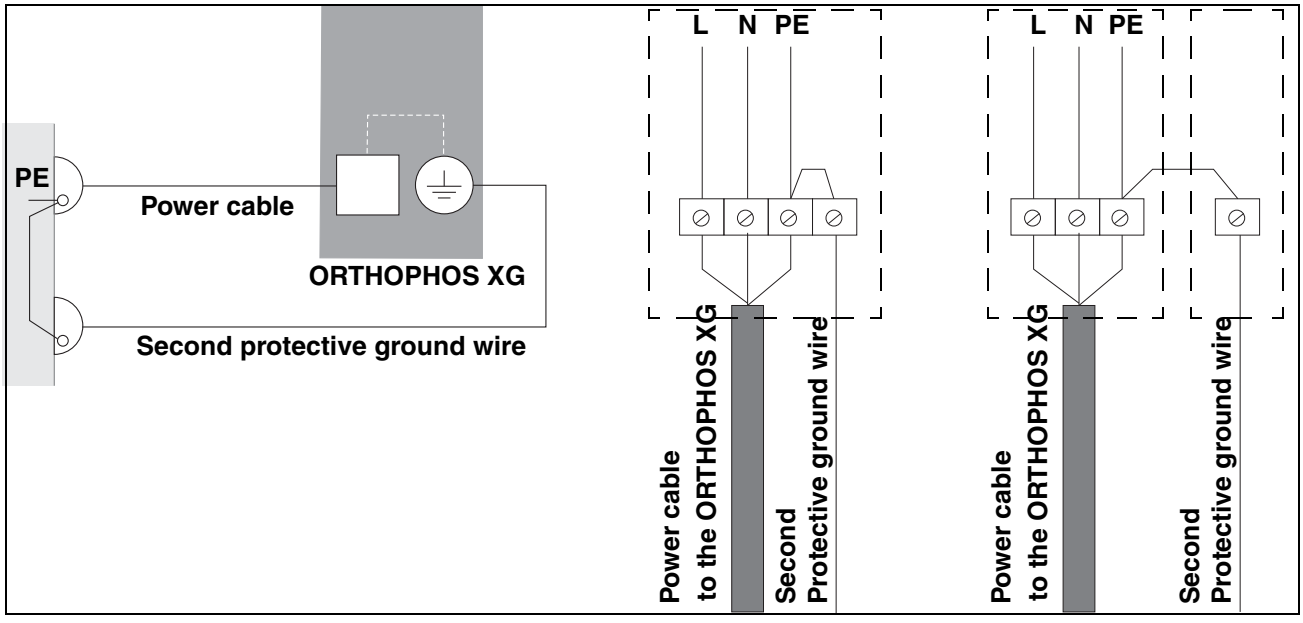
WARNING

Be sure to connect the second protective ground wire to ground.

CAUTION

Incorrectly connected units can pose a risk to patients!
Building installation with 3x1.5 mm² or 3x2.5 mm² (16 AWG or 14 AWG) and a 16 A/20 A overcurrent circuit breaker.
-Connect only units which do not pose any risk to patients when the
automatic circuit breaker is triggered.
-Do not connect any EDP units.
-See also "Installation requirements".

1.



ORTHOPHOS XG 3

- The unit is suitable for connection to networks of **200 - 240 V and 50 - 60 Hz, ± 10 %**.

1. Check the protective ground wires and the device leakage current according to IEC 62353: 2007 (See sections "6.1 Checking the protective ground wires Page 60" and "6.2 Checking the device leakage current Page 63").
2. Record the measured values in chapter 3 of the document "Inspection, maintenance and safety-related check".
3. Carry out the power supply connection as shown above first.

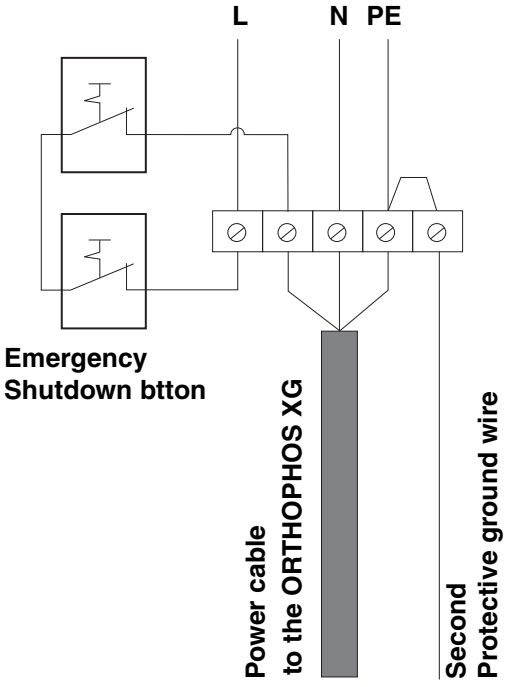
Media converter

WARNING

When operating the unit at exhibitions and fairs, you must observe the information provided in section 11.3 Demo mode!

- Plug the connector of the media converter's power supply unit into the electric outlet.

EMERGENCY STOP installation
(if legally prescribed)



- Use the emergency shutdown button that is integrated into the power cable to switch on the unit.

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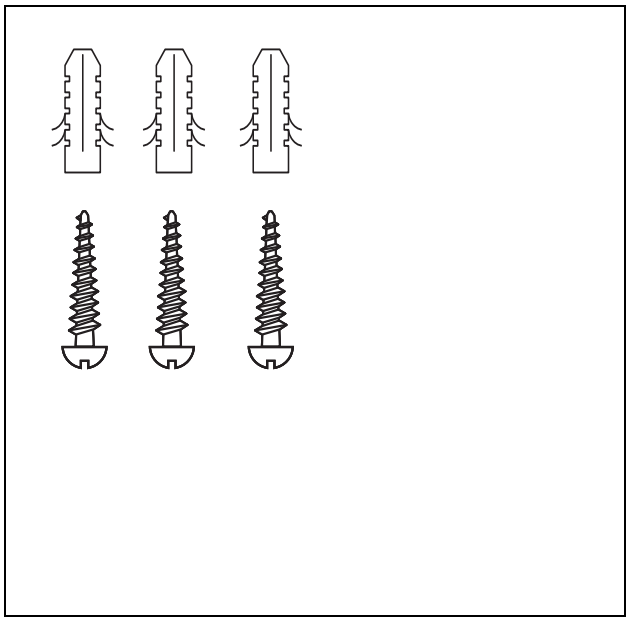
5 Installation: Remote control

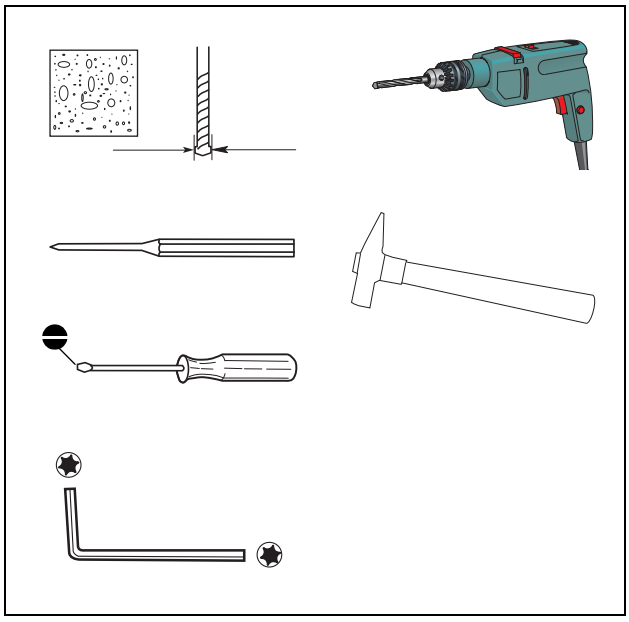
ORTHOPHOS XG 3

5.1 Installation material/tools

1.



2.

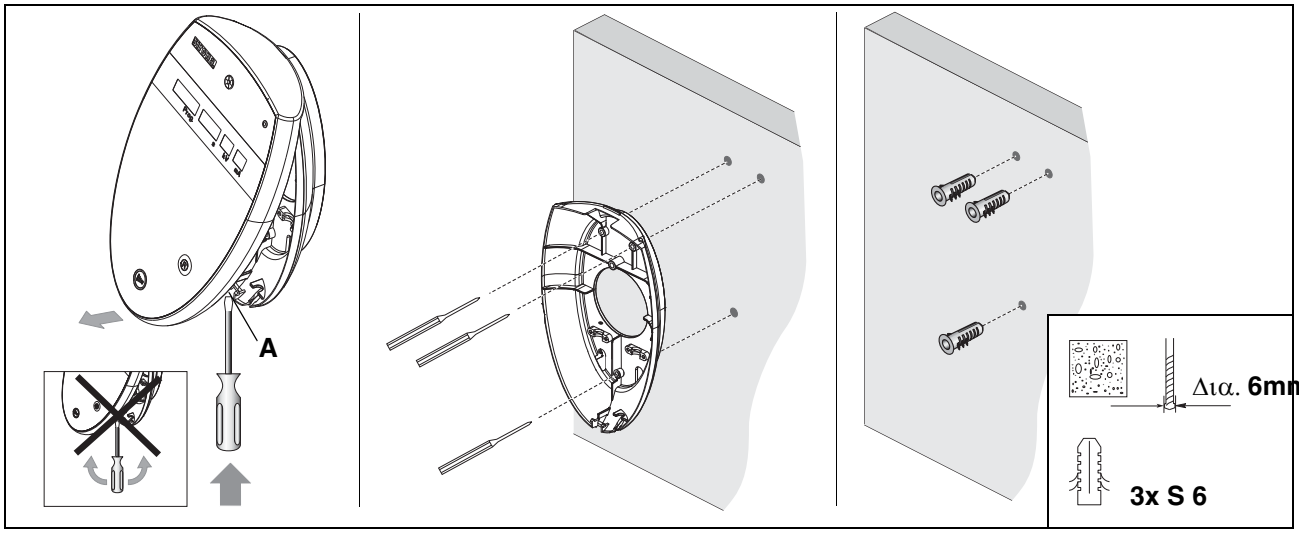


1. Installation material for remote control
- Wood screw 4x30 (3/16x1 1/4): 3 pc.
- Plastic wall plug S6: 3 pc.

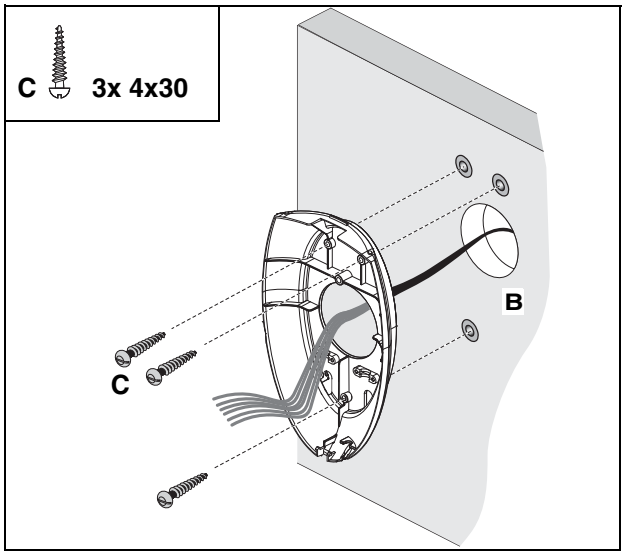
2. Required tools
- Masonry drill δια.6 mm (1/4“)
- Impact drill or percussion drill
- Blade screwdriver (small and medium sized)
- Torx offset screwdriver TX20
- Hammer
- Center punch/awl

5.2 Mechanical installation

1.



2.



1. Carefully press the blade screwdriver in groove **A** from below (**do not pry!**) and remove the chassis to the rear.

Hold the chassis against the wall in its mounting position and mark the positions for the three drill holes with an awl.

Drill the holes and insert the wall plugs.

IMPORTANT

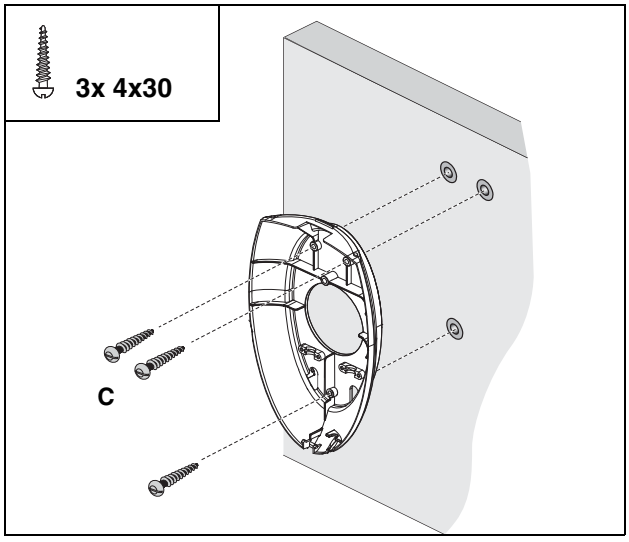
For concealed installation, the control cable is drawn into the chassis from the rear. For surface installation it is drawn in from underneath.

For concealed installation

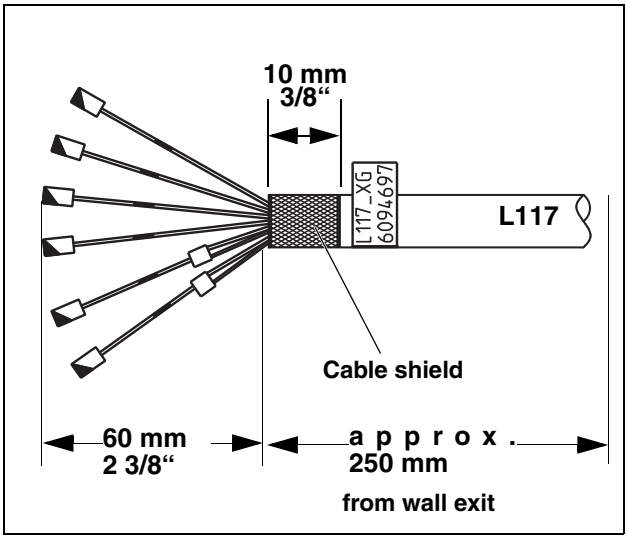
2. Draw the control cable into the chassis from the wall through rear opening **B** and fasten the chassis securely to the wall with the three screws **C**.

– For concealed installation, the cable length between the wall exit and the stripped wire ends should be 250 mm.

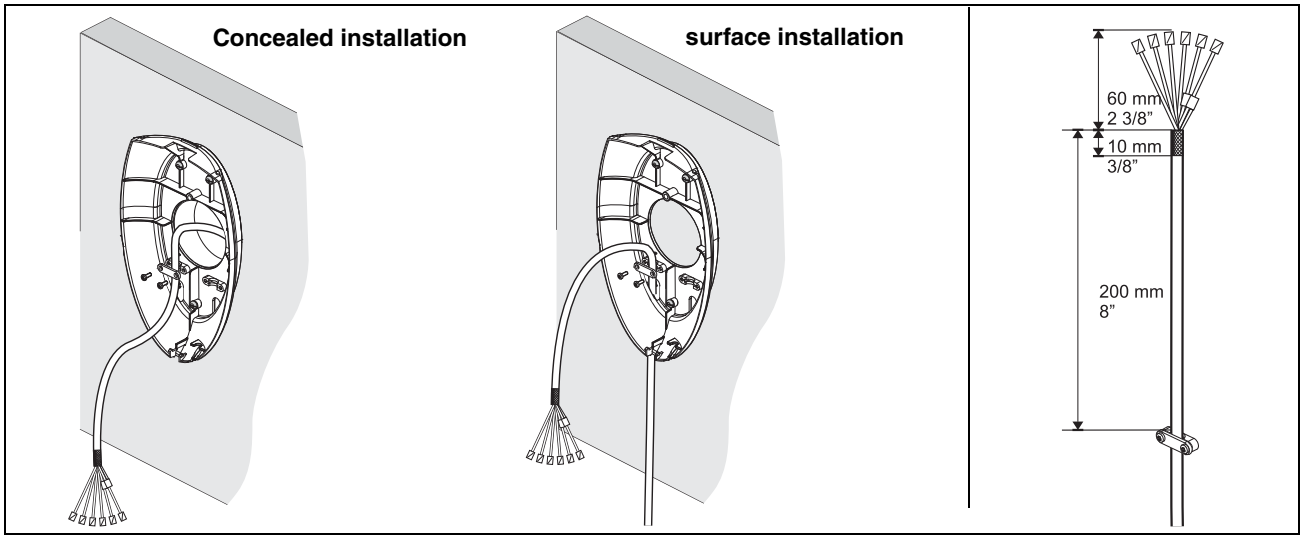
3.



4.



5.



For surface installation

3. Fasten the chassis firmly to the wall with the three screws **C**.

Shortening cable L117

4. If necessary, shorten cable **L117** to the required length and prepare it for reconnection.

– Expose the cable shield (see condition on delivery). The length of the wires should be approx. 60 mm (2 3/8“).

– Place the shortened shielding over the insulation and wrap the shielding with 3 layers of self-adhesive copper foil.

– Strip the wire ends 5 mm.
Crimp on the end sleeves.
Insert the orange, white-blue, blue and white-orange wires in separate end sleeves.

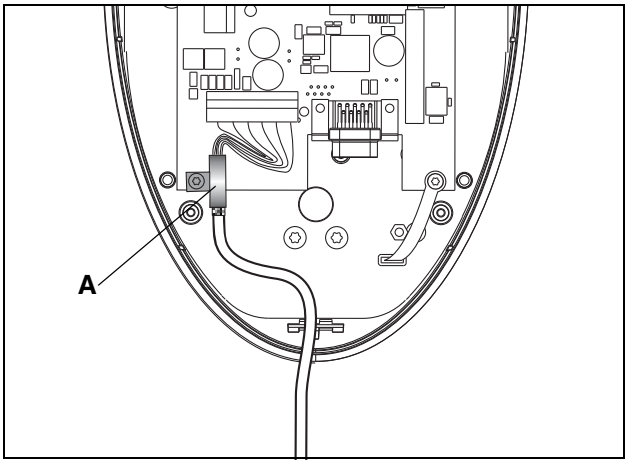
Attaching the strain relief

5. Attach cable **L117** at the strain relief in the chassis (concealed or surface installation).

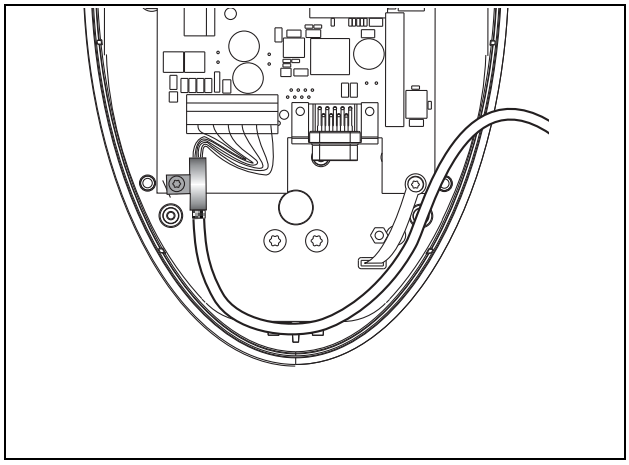
– The cable length between the strain relief and the stripped wire ends should be 200 mm (8“).

5.3 Connecting the control cables (REMOTE)

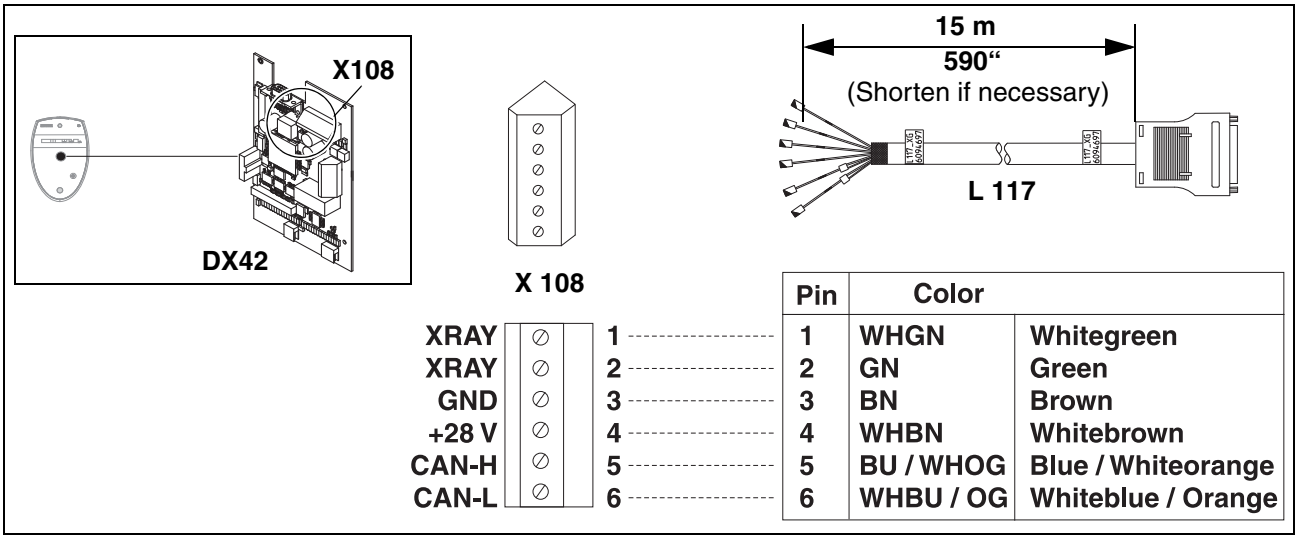
1.



3.



2.



Pin	Color	
1	WHGN	Whitegreen
2	GN	Green
3	BN	Brown
4	WHBN	Whitebrown
5	BU / WHOG	Blue / Whiteorange
6	WHBU / OG	Whiteblue / Orange

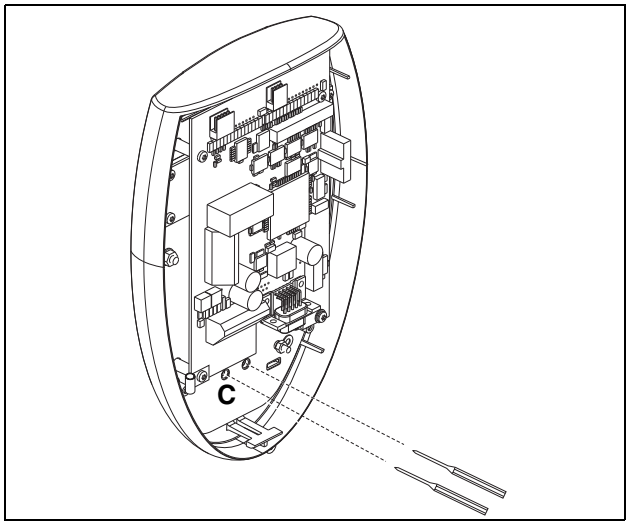
5.3.1 Installation version 1: without release button and coiled cable

1. Attach cable **L117** at shield clamp **A**.
   - Unscrew clamp **A** from the board.
   - Place the cable in the clamp so that the turned up cable shield is completely enclosed.
   - Re-attach the clamp to the board.
2. Connect control cable **L117** to terminal **X108** (board **DX42**) as shown in the connection diagram above.
3. Roll cable L117 into a loop and stow it away at the bottom edge of the chassis before closing the housing.

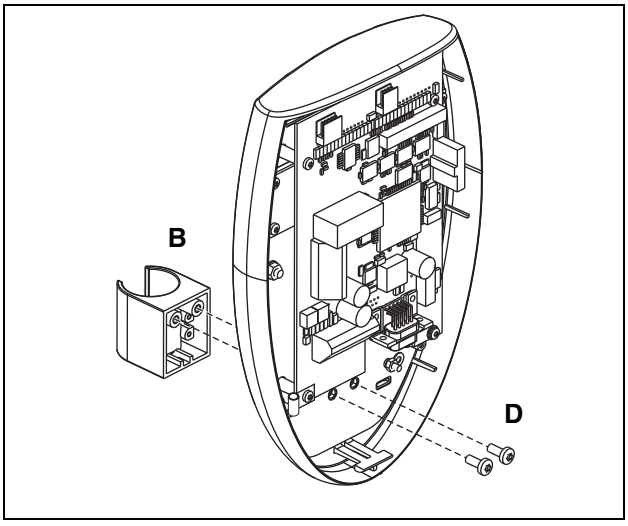
IMPORTANT

For information on the connection of a door contact switch, see section 5.4.

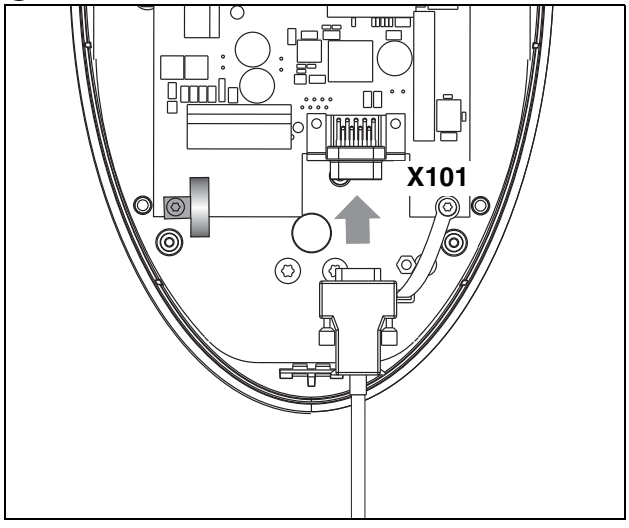
1.



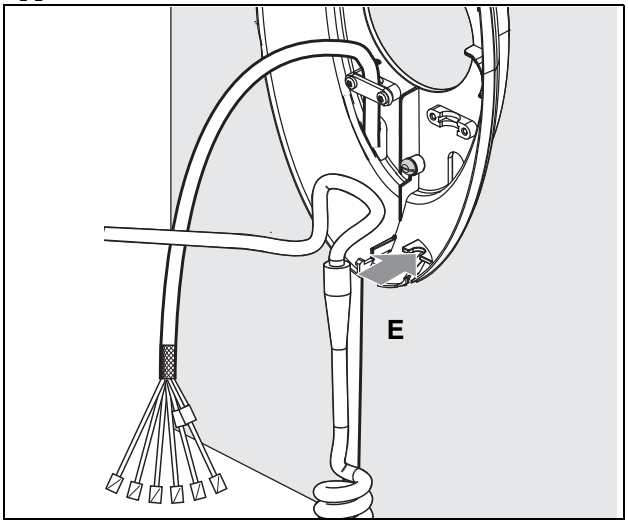
2.



3.



4.



5.3.2 Installation version 2: with release button and coiled cable

NOTICE

Operation of the remote control via the membrane keyboard is prohibited when installing the remote control with release button.

Installing the release button holder

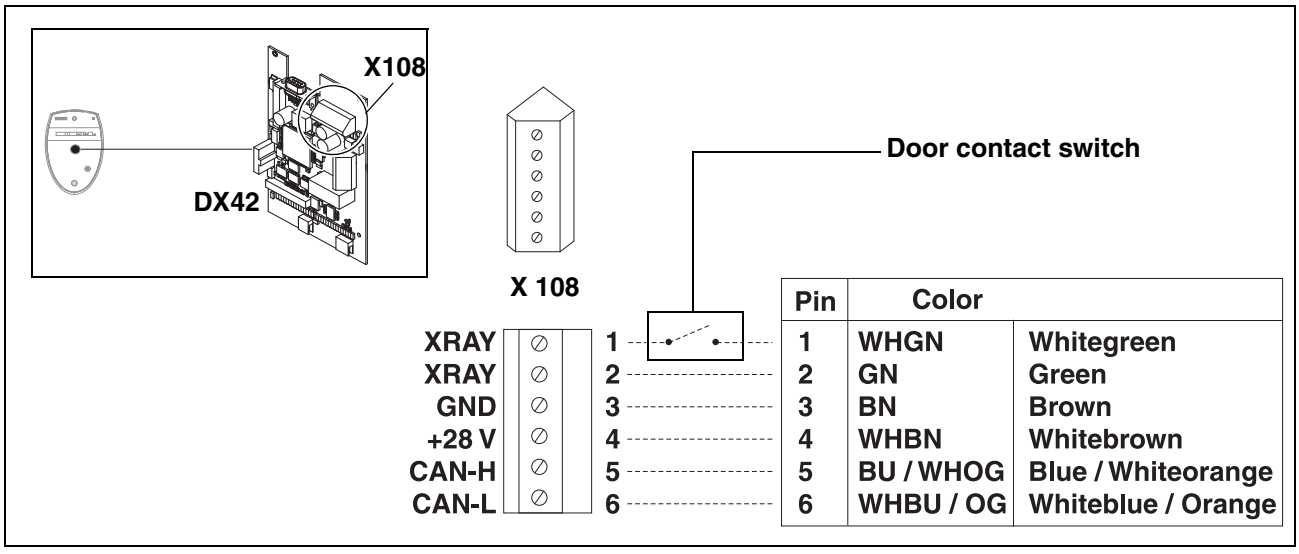
1. Use an awl to puncture the membrane keyboard at the prepared points **C** from the rear.
2. Using the two screws **D**, fasten the release button holder **B** to the keyboard.
3. Plug the connector of the coiled cable into socket **X101** on board **DX42** and screw the connector down tight.
4. Hang the coiled cable in strain relief **E** of the assembled chassis.

Connecting the control cable

- Connect control cable **L117** as described in section 5.3 on page 53.

5.4 Connecting the door contact switch

1.

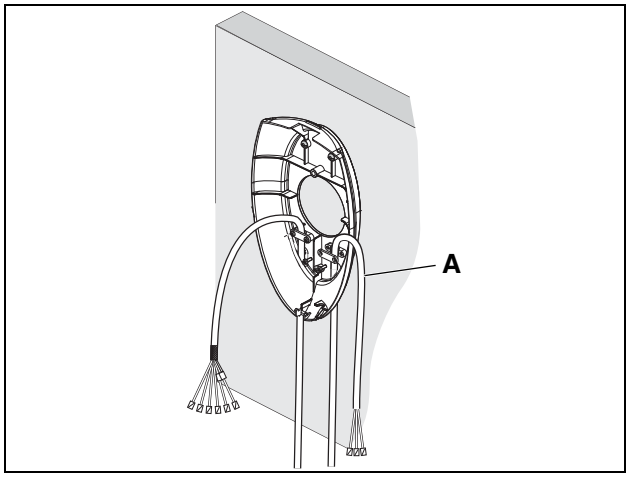


Pin	Color	
1	WHGN	Whitegreen
2	GN	Green
3	BN	Brown
4	WHBN	Whitebrown
5	BU / WHOG	Blue / Whiteorange
6	WHBU / OG	Whiteblue / Orange

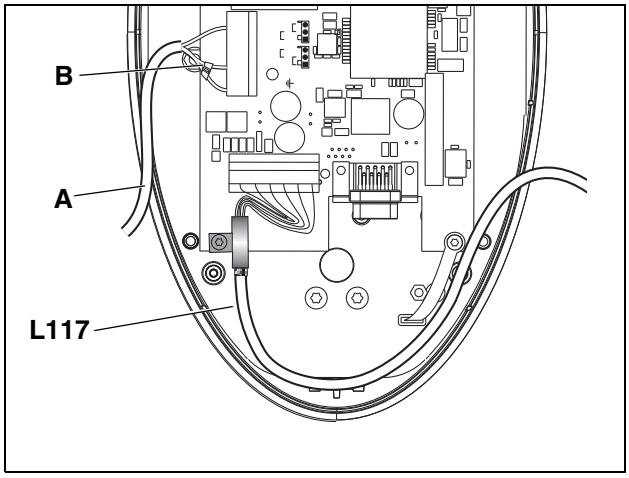
1. Connect the door contact switch between terminal **X 108 pin 1** (board DX 42) and control cable **L117 pin 1** (WHGN).

5.5 Connecting the X-ray warning lamp

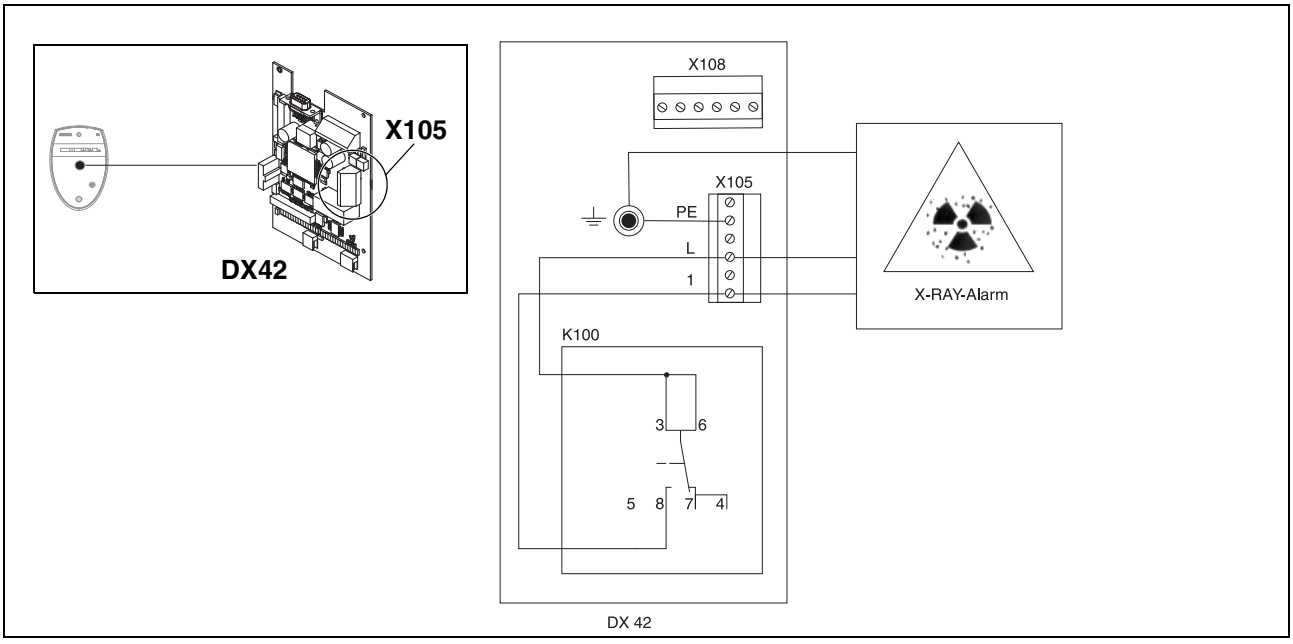
1.



3.



2.



It is possible to activate an X-ray warning lamp via the remote control. For connection, proceed as follows:

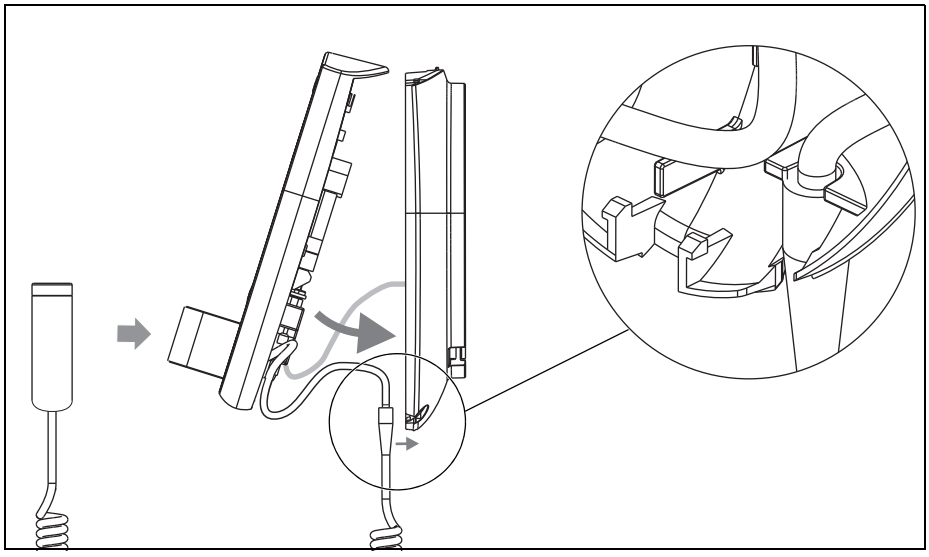
NOTICE

Use a 3-wire cable (1.5 mm^2) to connect the X-ray warning lamp.
A maximum load of 50 W is permissible and no additional circuit may be connected.

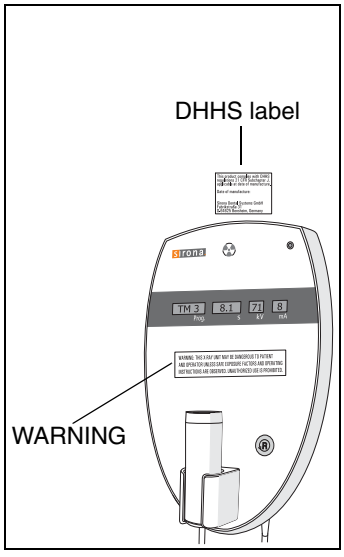
1. Insert cable **A** for connection of the X-ray warning lamp in the chassis (concealed or surface installation) and attach it to the unused strain relief.
2. Connect the current-carrying cables and the ground wire to terminal **X105** (board **DX42**) as shown in the connection diagram above. Secure the current-carrying cables with a cable tie **B** to prevent them from slipping out.
3. Run cable **A** parallel to control cable **L117** before closing the housing.

5.6 Final work

1.



2.



1. Reassemble the remote control and place the release button (if installed) in the holder.

NOTICE

Make sure that no cables are pulled off when you clip the cover on.

IMPORTANT

For operation with a remote control, the unit must be configured accordingly. After initial startup of the unit, check the configuration with the help of ***service routine S017, test step 6*** *(see section 11.1.6).*

2. For the USA/Canada only: Attach the DHHS and warning labels.

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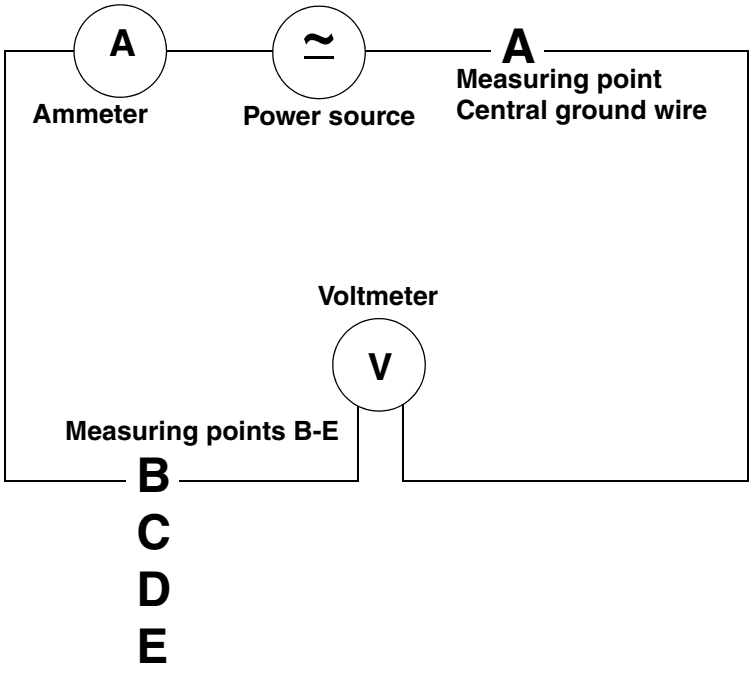
6 Safety checks

ORTHOPHOS XG 3

6.1 Checking the protective ground wires



Measuring setup for protective ground wire test

DANGER

Shock hazard! It is essential that you switch the X-ray unit OFF before replacing any components!

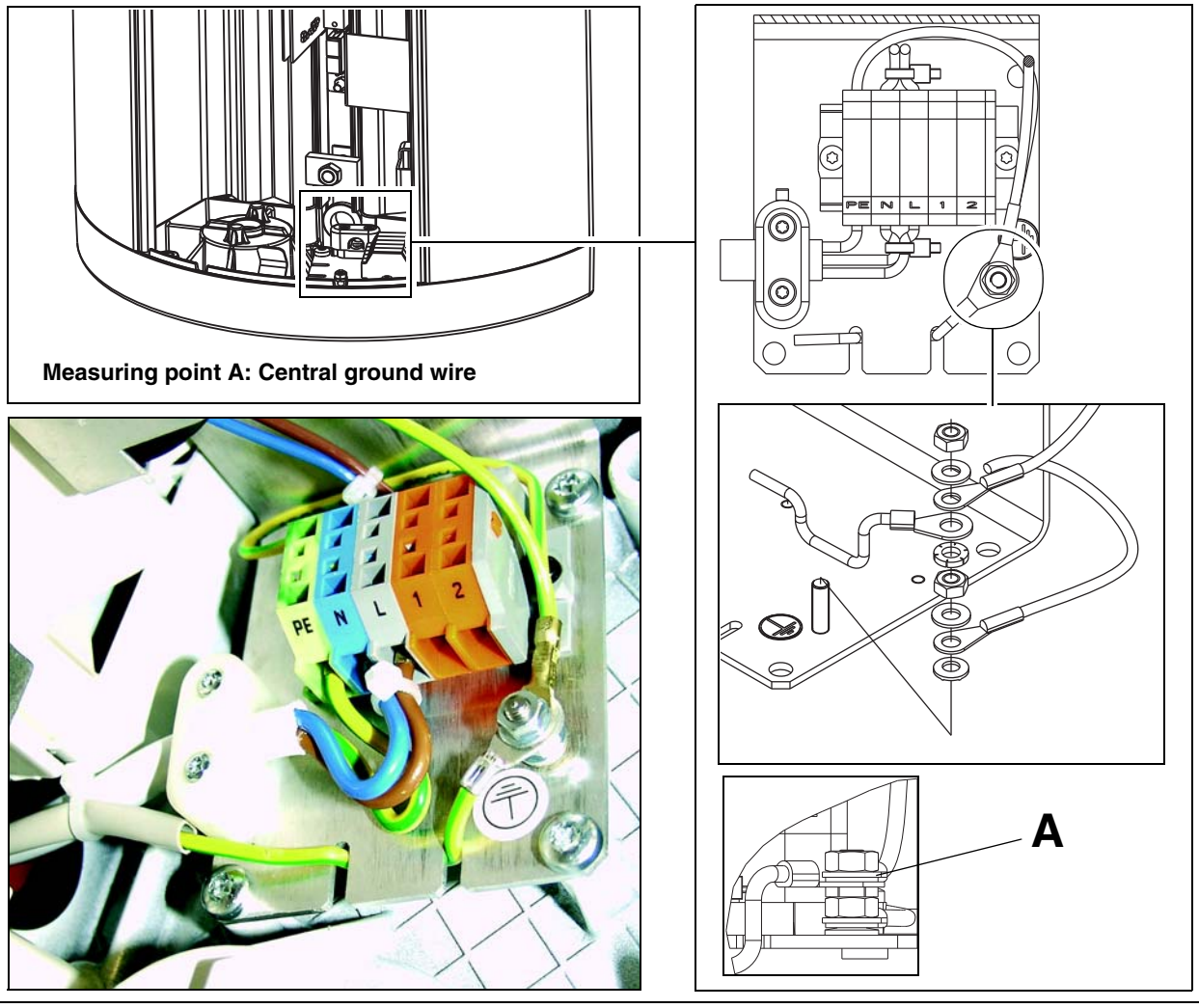
If you have not done it already...

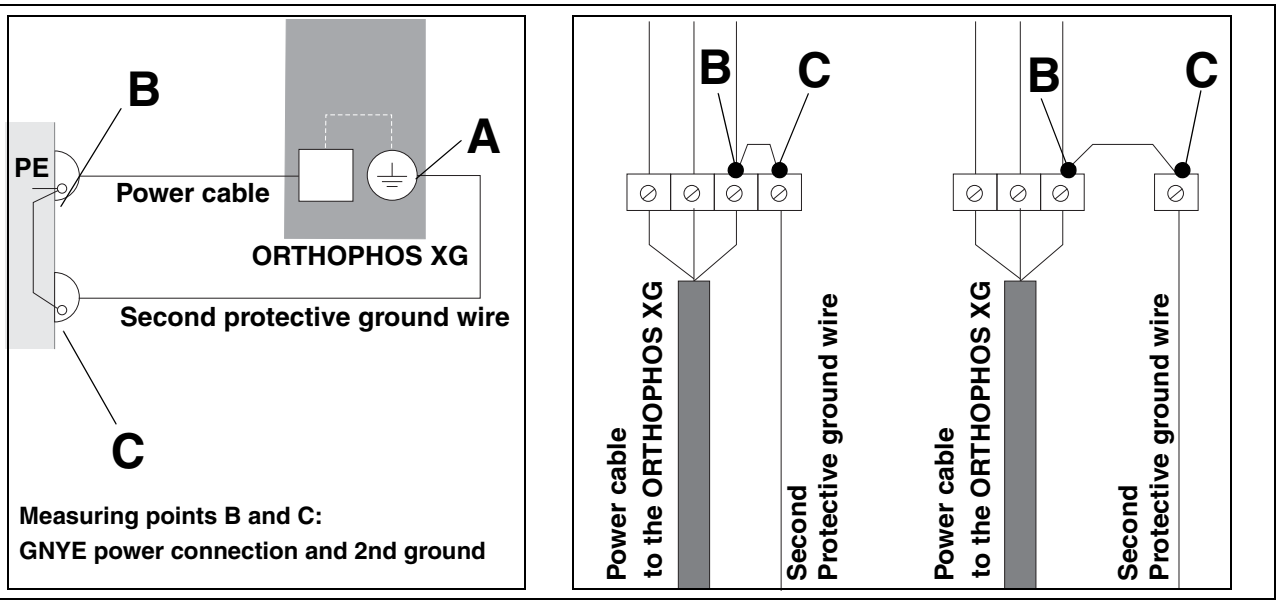
- Switch **OFF** the line voltage at the main switch of the building installation.
- Disconnect the power cable and the second protective ground wire from the building installation.
- Remove the following cover parts:
  - Profile cover
  - Tube assembly cover, front
  - Tube assembly cover, rear

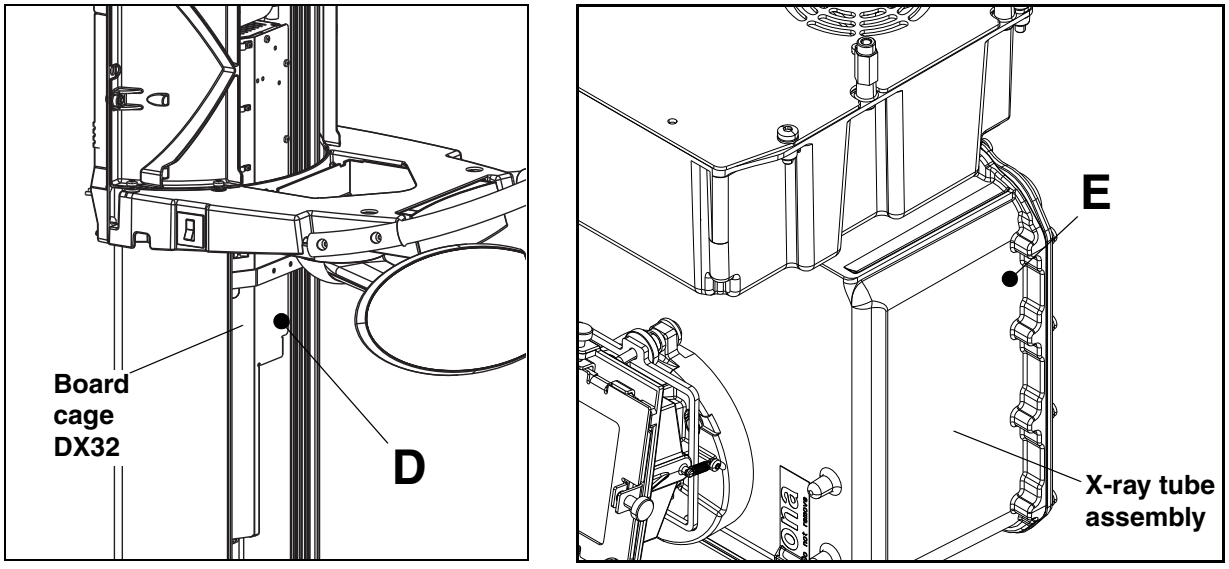
Check whether the ground wire resistance complies with the specifications

Protective ground wire test between...			
A and	B	GNYE wire	0,1Ω
A and	C	2. Protective ground wire	0,1Ω
A and	D	Housing DX32	0,2Ω
A and	E	Tube assembly housing	0,2Ω

- A power source with a current of at least 0.2 A and a no-load voltage of 24 V max. and 4 V min. is required.
- Connect the power source between the measuring points specified in the table for at least 5 s and measure:
  - the voltage drop with the voltmeter
  - the current with the ammeter and
  - calculate the resistance using the formula **R = U / I**


Measuring point A: Central ground wire
PE
N
L
1
2
A


B
PE
A
Power cable
ORTHOPHOS XG
Second protective ground wire
C
Measuring points B and C:
GNYE power connection and 2nd ground
B
C
Power cable to the ORTHOPHOS XG
Second Protective ground wire
B
C
Power cable to the ORTHOPHOS XG
Second Protective ground wire



Measuring points D and E:

IMPORTANT

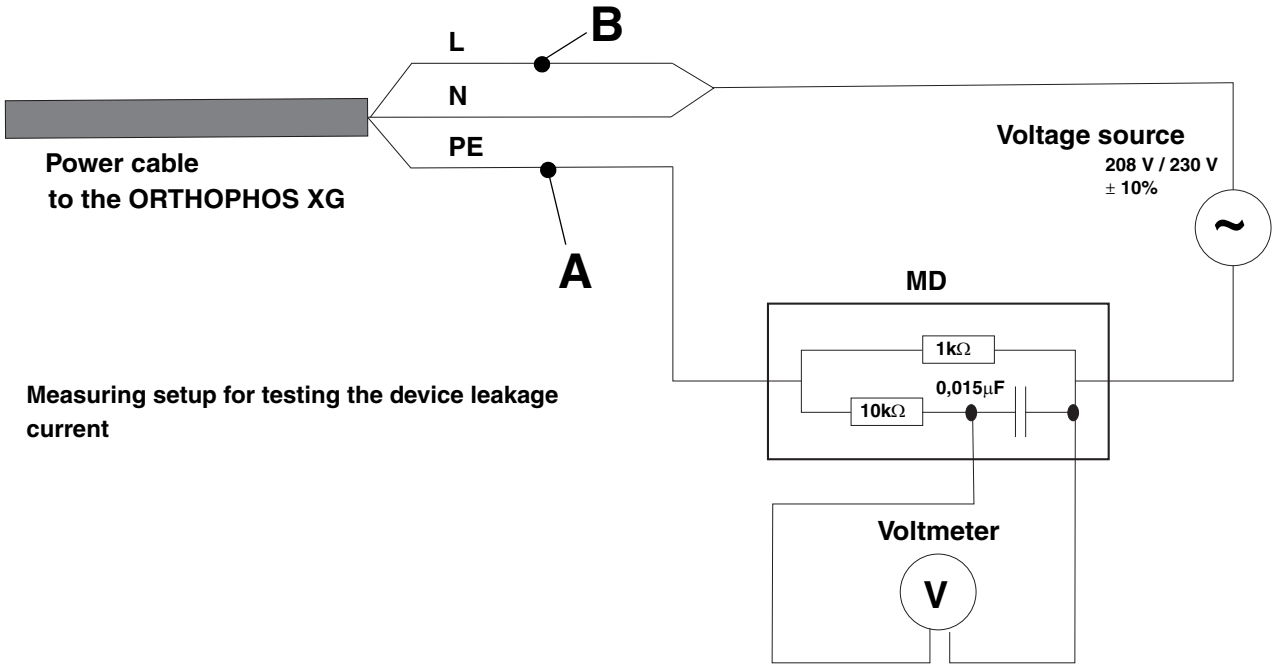
If the resistance exceeds the value specified in the table, check whether the protective ground wire is fastened according to specifications:

–Check whether the flat washer, toothed lock washer and cable lug are fitted on the protective ground wire in the right order (see page 61) and whether the nuts of the ground wire connections are tightened securely.

If the ground wire is not fastened according to specifications, fasten the ground wire properly (see page 61).

Do not connect the power cable and the second ground wire to the building installation yet, but perform a measurement of the device leakage current first (see section).

6.2 Checking the device leakage current



Measuring setup for testing the device leakage current

DANGER

Shock hazard! It is essential that you switch the X-ray unit OFF before replacing any components!

IMPORTANT

A high-resistance measuring voltage source at line frequency and a measuring circuit compliant with the requirements of IEC 60 601 are required.
Complete test units, e.g. the "Bender tester", fulfill these requirements.

If you have not done it already...

- Switch **OFF** the line voltage at the main switch of the building installation.
- Disconnect the power cable and the second protective ground wire from the building installation.
- Remove the following cover parts:
  – Profile cover

1. Check whether the power switch of the unit is turned **ON**.
2. Connect a high-resistance measuring voltage source between the short-circuited power cable **(B)** and ground wire **A**.
3. Measure the voltage drop across **MD**.

IMPORTANT

*The measured value must not exceed **5 mA**.*

If the leakage current is not OK, perform troubleshooting according to the service manual.

- Now reconnect the unit to the building installation.

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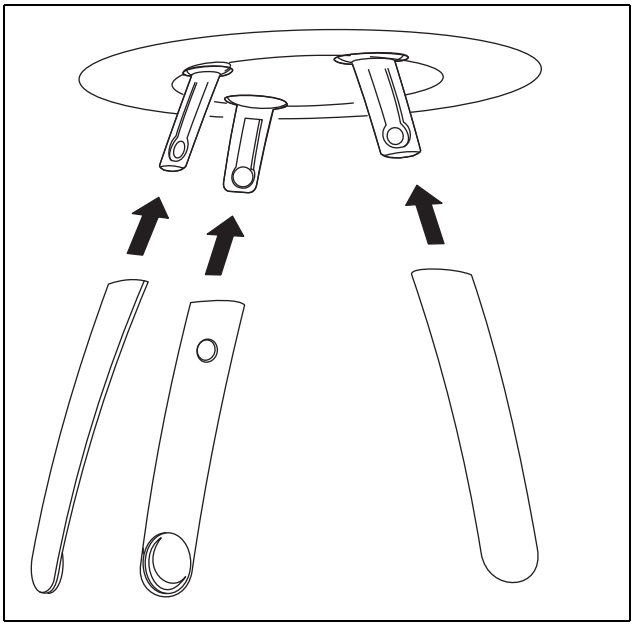
7 Initial startup

ORTHOPHOS XG 3

7.1 Inserting the forehead and temple supports

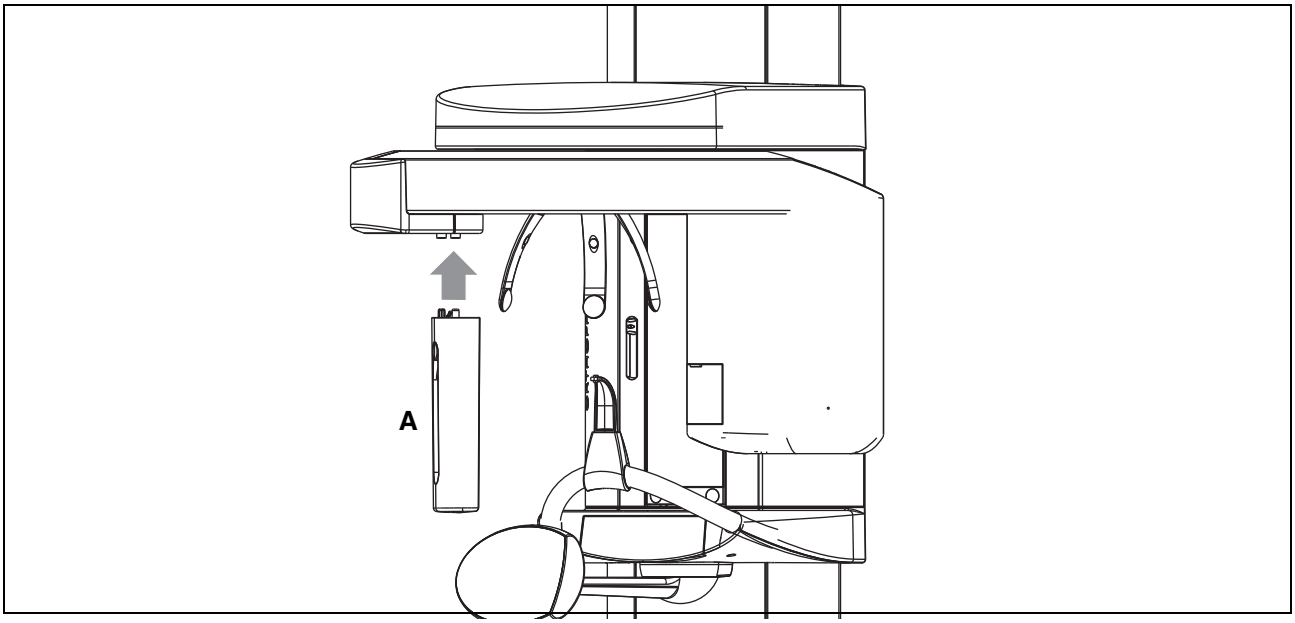
1.



1. Insert the forehead and temple supports until they lock in place.

7.2 Inserting the sensor

1.



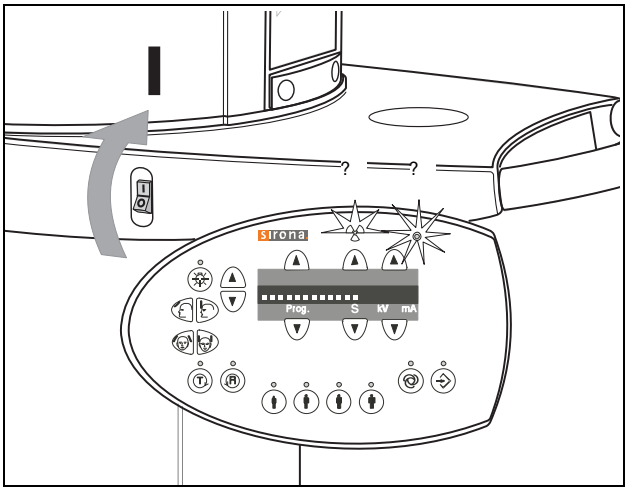
NOTICE

The sensor is a sensitive component, and therefore must be handled with special care.

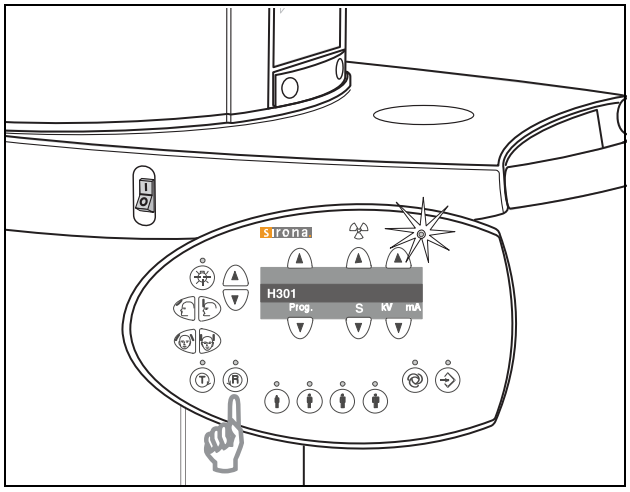
1. Carefully plug sensor **A** upward into the holder until it audibly locks in place.

7.3 Switching the units ON

1.



2.



WARNING

When performing the following test, be sure to observe the radiation protection regulations applicable in your country (see operating instructions).

It is prohibited for any person to be positioned in the unit when it is switched on.

NOTICE

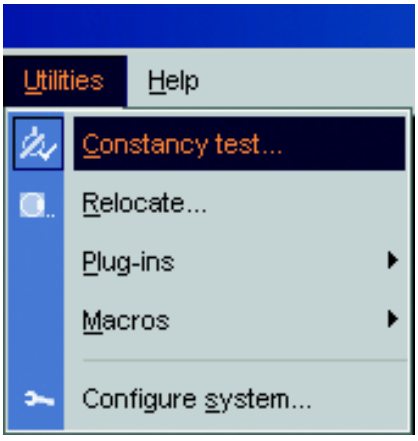
If the room height is less than 2.27 m (89 3/8“) (2.30 m (90 1/2“) with floor stand), you must limit the maximum travel height of the unit (see section 11.1.7).

1. Switch the unit **ON**.
   - All LEDs and the LED display on the Multipad light up briefly.
   - The green LED at the top of the Multipad ❷ is lit permanently as long as the unit is ON.
   - The initialization status is visualized by a progress indicator while the unit executes a self-adjustment routine (approx. ½ min.). At the same time, the rotating element rotates briefly clockwise and counterclockwise and the diaphragm is positioned. The forehead and temple supports on the panoramic unit open and close and then stop moving in fully opened position.
   - Once the self-adjustment routine is completed, help message H301 prompts you to move the unit to the starting position.
2. Press the **R key** to move the unit back to the starting position.

• Switch the PC **ON** and start SIDEXIS XG.

7.4 Checking the data paths

1.



2.

7.4.1 Generating pan/ceph test images/Checking the pan/ceph/PC data path

IMPORTANT

SIDEXIS XG must be installed and configured before you begin checking the data paths (see "SIDEXIS - Operators Manual").

1. In SIDEXIS XG, select the constancy test:
   UTILITIES → **CONSTANCY TEST**.

   The classical SIDEXIS user interface is started. Constancy test is already preset.

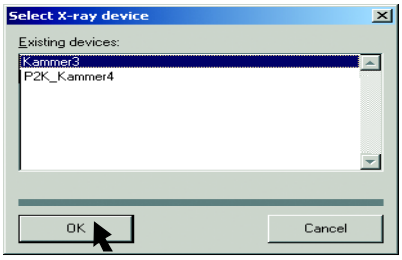
2. Start the exposure mode:
   Click **XCXP**

   The dialog box for selecting the X-ray device opens.

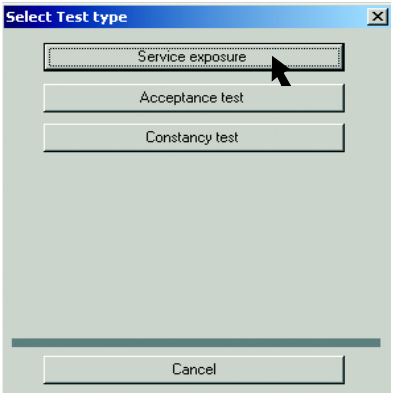
IMPORTANT

If no X-ray device has been configured yet in SIDEXIS XG, the password input window appears instead of the dialog box for selecting the X-ray device. For creating a new X-ray device (see documentation "SIDEXIS XG - Installation of Stand-Alone Systems").

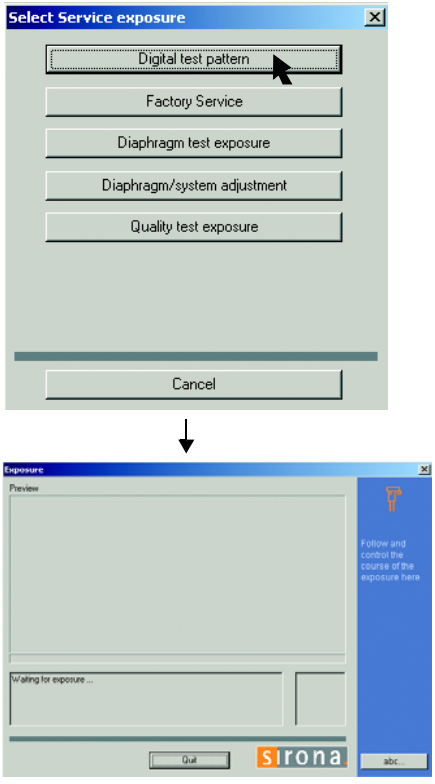
3.



4.



5.



3. Select/confirm the X-ray device:
Select e.g. **ROOM 3** and click **OK**.

IMPORTANT

*The **SELECT X-RAY DEVICE** dialog appears only if several X-ray devices are installed.*

The dialog box for selecting the test type appears on the screen.

4. Select/confirm the test type:
Click **SERVICE EXPOSURE**.

The dialog box for selecting the service exposure appears on the screen.

5. Select/confirm the service exposure:
Click **DIGITAL TEST PATTERN**

– If several different X-ray components are available, a dialog box for selecting the X-ray component appears on the screen. In this case, select/confirm the required component.

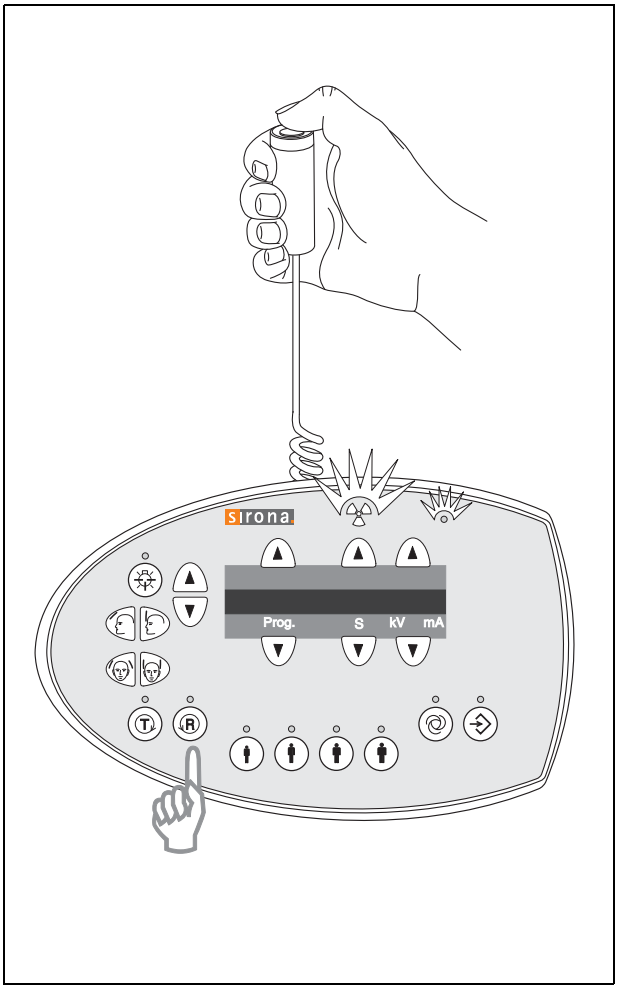
– If only one X-ray component is available, the exposure readiness dialog box appears on the screen and shows the status of the exposure.

IMPORTANT

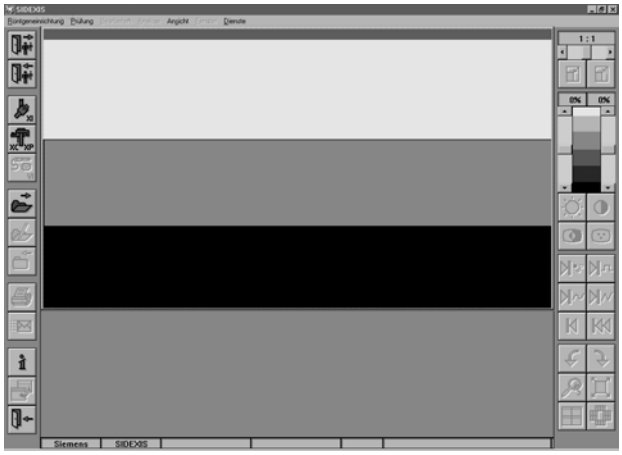
During operation in the service mode, the unit switches from the user mode to the PC service mode logged by the PC. The service mode is indicated by the **SERVICE** *display on the Multipad (see page 84).*

The unit switches back to the user mode as soon as the exposure is completed.

6.



7.



6. Take an exposure:

- Press the **R key** on the Multipad to move the unit back to the starting position.
- Press the release button. Hold down the button until the exposure has been completed.

IMPORTANT

*A service message box indicates whether the generated test image is correct. Acknowledge this message with **OK**. The test image is displayed on the screen.*

7. Test pattern for panoramic unit

Check the images according to the following criteria:

- Tile structure of the existing segments

Tip: To facilitate checking, you can adjust the image contrast and brightness in SIDEXIS.

- Linear grayscale gradient
- Intensity steps clearly recognizable
- No image artifacts detectable

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8 Startup for USA/Canada only

ORTHOPHOS XG 3

8.1 Startup, measurements and controls

Required measuring instruments

1. Digital multimeter Fluke 87 III or equivalent.
   Accuracy:
   DC voltage ± 0.1 % of reading plus 0.02% of range
   DC current ± 0.4 % of reading plus 0.1% of range.

2. A dose measurement device (e.g. Mult-O-Meter type 510L) is required for dosimetry

Radiation protection

Observe the radiation protection guidelines as outlined in the Operating Instructions manual.
X-radiation is emitted as long as the exposure key on the Multitimer is depressed.
The **X-ray** indicator must light up on the Multitimer during radiation. An acoustic signal must also be heard.

Power supply adequacy

To assure that the ORTHOPHOS XG system performance is in accordance with Sirona specifications, an adequate power supply for permanent installation is essential.

The Federal Performance Standard for Diagnostic X-ray Units, Code of Federal Regulations, Title 21 CFR, Subchapter J, mandates an adequate power supply.

Duty cycle

Between exposures maintain at least a cool-off time (automatic exposure blockage, see Operating Instructions manual).

Operating instructions

During measurements and controls it is necessary to energize or de-energize the unit. For all operating steps please refer to the Operating Instructions manual.

CAUTION with PC boards!

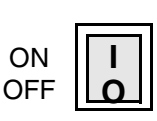
All PC boards are fitted with electronic components sensitive to electrostatic discharge (ESD). In an environment of moving people, electrostatic charges are unavoidable due to friction caused by clothing, carpeting etc.

NOTICE

To prevent damage to electronic chips, do not touch same. Always handle circuit boards by their edges.

NOTICE

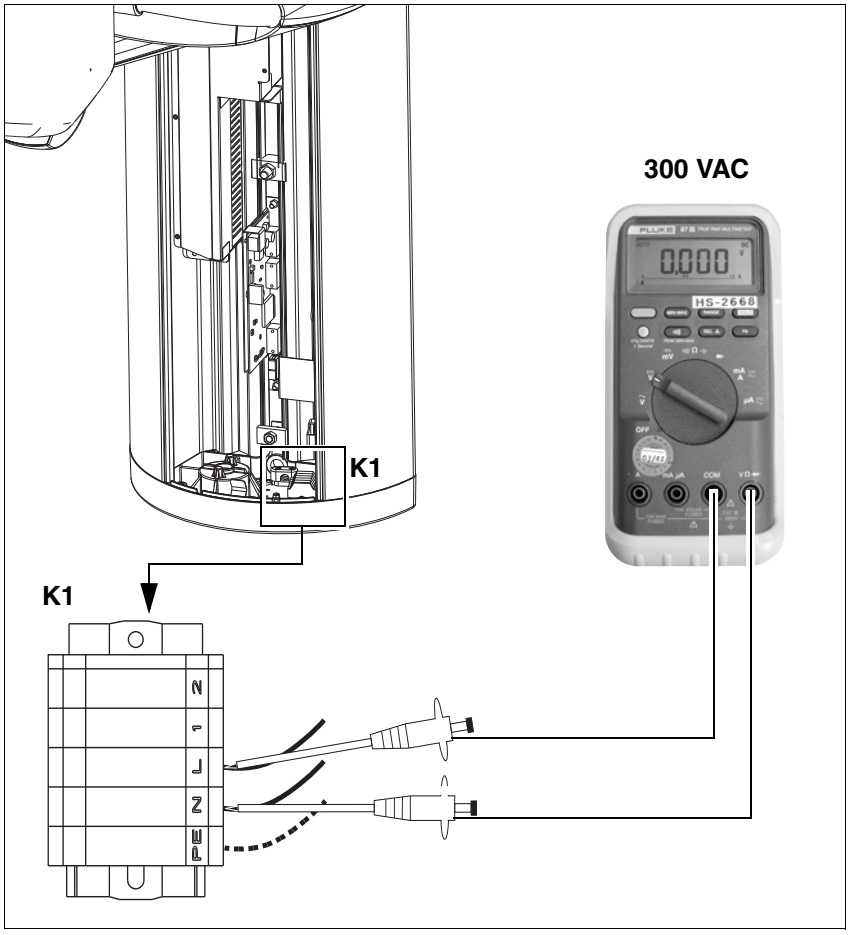
Electrical shock hazard!
Always turn unit OFF before connecting and disconnecting the test leads to the test points.



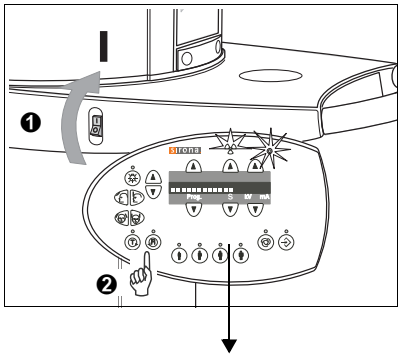
8.2 Power supply adequacy

1.

2.



3.



4. - 5.

- To determine power supply adequacy, the **line voltage drop** during exposure must be measured.

1. Be sure power is disconnected at the central distribution panel!

- Remove front cover (for details see Service Manual).

2. Select 300 VAC line voltage range on multimeter . Connect measuring leads to terminal **K1**, **L** and **N**.

3. Connect power and switch unit ON ❶ .
Wait 1 min. for self-adjustment of the unit.
Press key **R** ❷ to return X-ray tube head into the initial position.

4. Establish exposure readiness via SIDEXIS.

5. Select **highest exposure level** e.g. **90** kV/**12** mA.

DANGER RADIATION

Depress the exposure key until meter reading is obtained.

Line voltage, no-load:	Max. permissible line voltage drop:
180 – 208 V	9 V
208 – 230 V	8 V
230 – 240V	7.5 V
240 – 264V	7 V

Record reading.

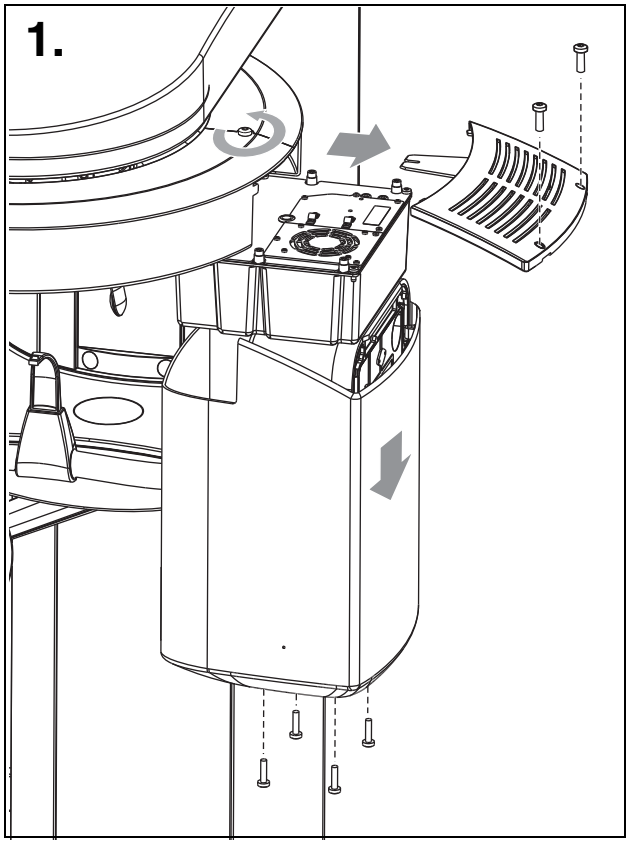
- Turn unit OFF.
- Remove meter leads and refit cover.

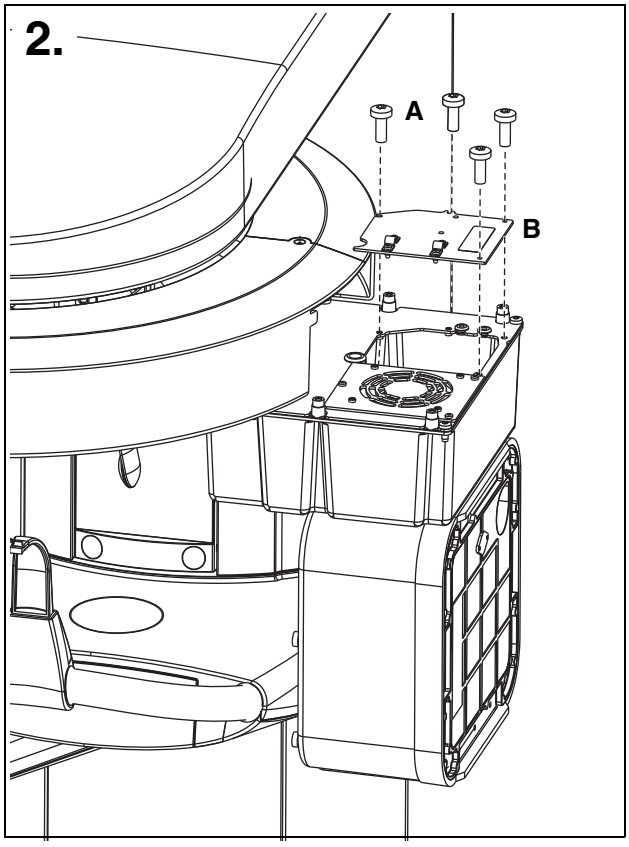
IMPORTANT

If the voltage drop is not within the specified range *advise the customer that an adequate power supply must be installed. Refer to Pre-Installation Instructions.*

Disconnect unit and do not release for use!

8.3 Tube Current Verification





WARNING

The electronics of the X-ray tube assembly are always connected to line voltage.

Always switch the X-ray unit off and wait until V203 is no longer illuminated before contacting the test leads.

WARNING

The test leads and measuring instruments used must have a dielectric strength of at least 1000V!

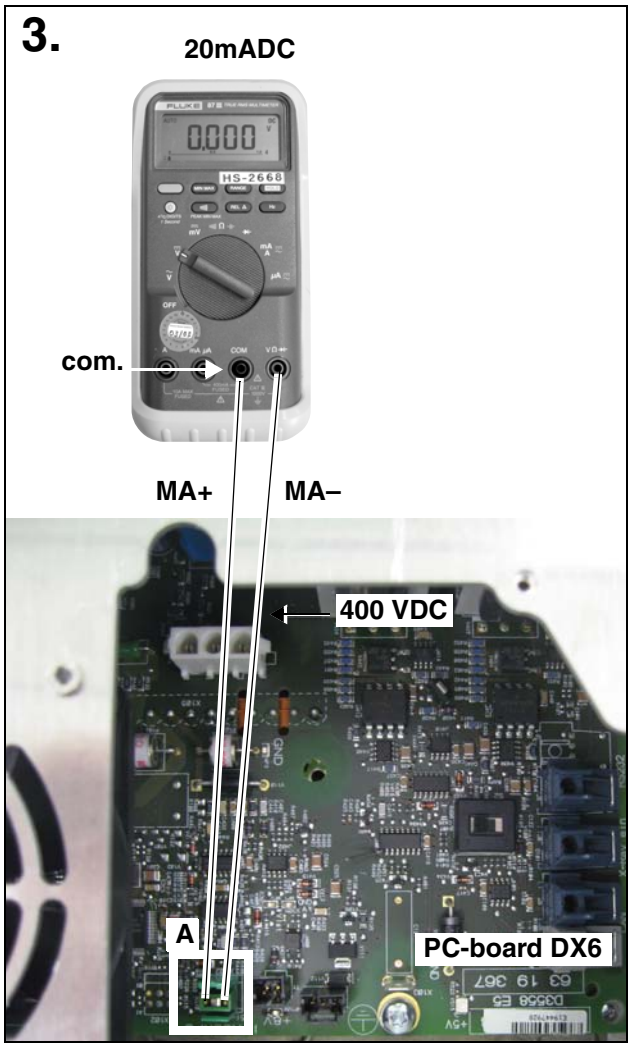
Be sure to use a battery-powered measuring instrument with shock-hazard-protected sockets.

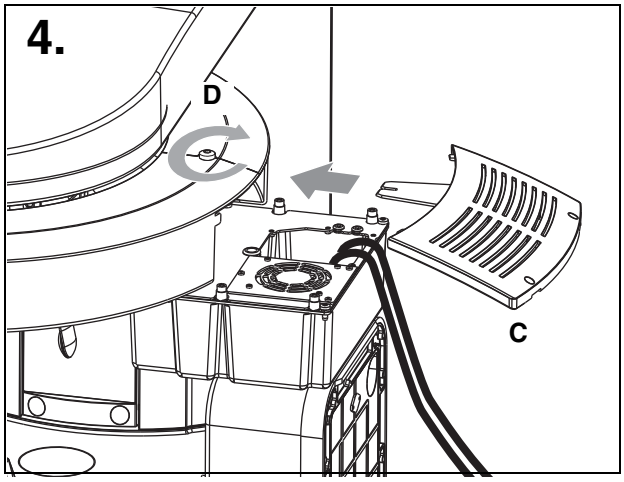
Use only test leads with shock protection.

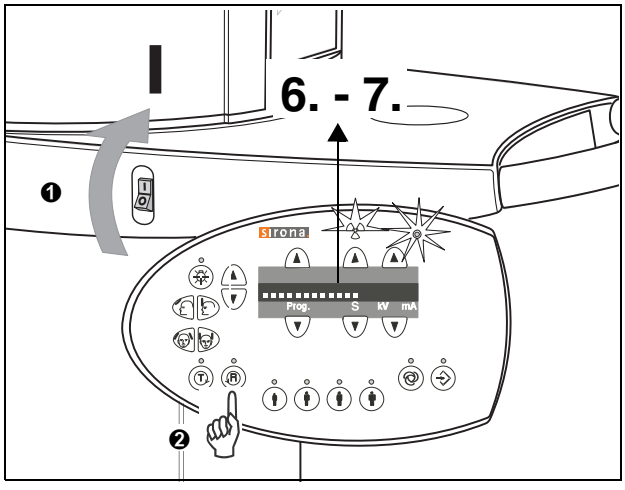
NOTICE

The X-ray tube assembly moves during the measurement. Therefore, be sure to use test leads of sufficient length and place the measuring instrument in a location where it is firmly seated so that it doesn't fall down.

1. Remove cover (for details see Service Manual).
2. Loosen the four screws **A** and remove cover plate **B** of the electronics box.







WARNING

Be sure to switch the X-ray unit off before removing the jumper for the mA measuring jack.

3. Remove jumper **A** from MA+/MA – test points on PC board DX6. Connect digital ammeter to MA+ and MA– and select range 20 mADC.
4. Reattach cover **C** and tighten screw **D** securely.
5. Switch unit ON ❶ .
   Wait 1 min. for self-adjustment of the unit.
   Press key **R** ❷ to return X-ray tube head into the initial position.
6. Select **66kV/8mA**. Establish exposure readiness via SIDEXIS.
7. If **P1** program and **66**kV/8mA are selected .
   The unit must be ready for radiation.

Measurement:

DANGER RADIATION

– ***Depress the exposure key and hold depressed until meter reading is obtained.***

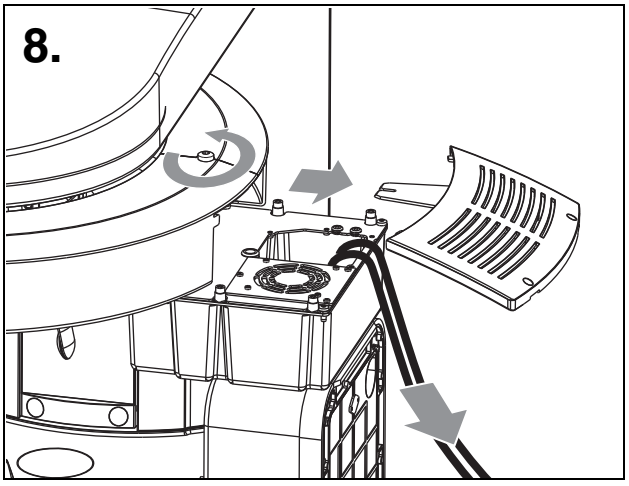
The ammeter shall indicate 8mA ±1.6mA.
Record reading.

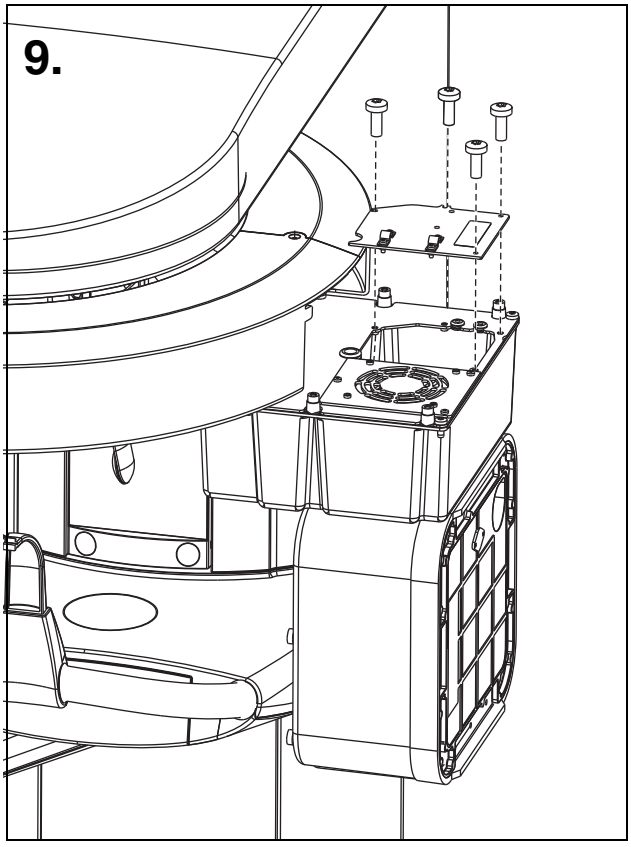
IMPORTANT

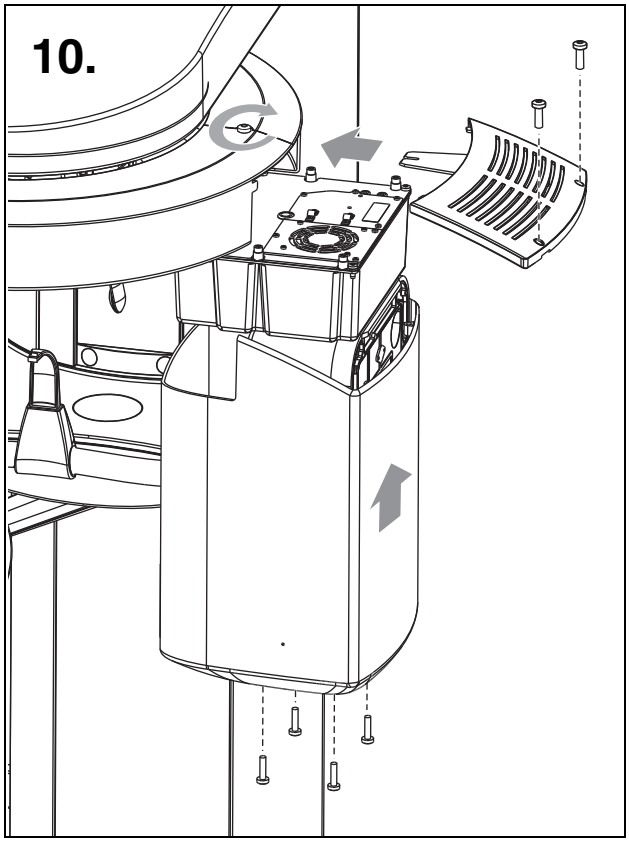
Readings: 1mA corresponds to a tube current of 1mA, permissible tolerance +/-20%.

IMPORTANT

***If specified values cannot be obtained**, see Service Manual, chapter "Tube Current Verification".*







- If specified value is obtained switch unit OFF.

8. Remove upper cover and meter leads

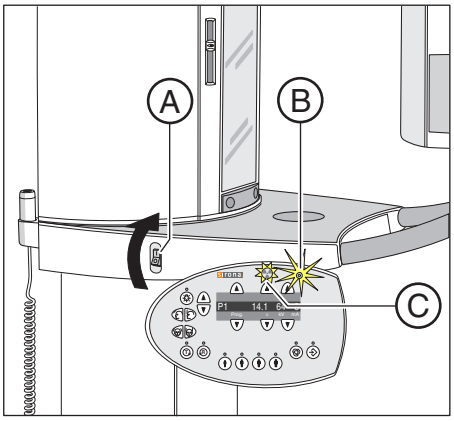
- Replace jumper!

9. Screw the cover plate back on to the electronics box.

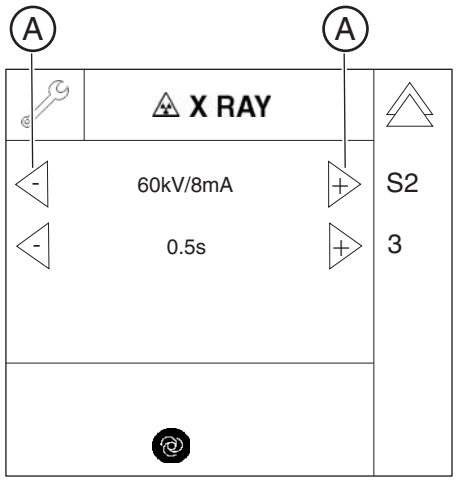
10. Reattach the housing covers.

8.4 kV – verification / Exposure Time Verification

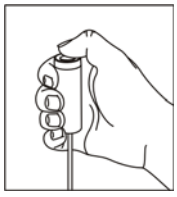
1.



4.



7.



Preparing the measurement

1. Attach the Mult-O-Meter sensor in the middle of the dual sensor.
2. Switch the unit on via the switch **A** (see also Operating Instructions)
   - ↳ The X-Ray radiation indicator (**B**) lights up briefly.
   - ↳ After approx. 2 seconds, the green LED (**C**) in the upper part of the control panel lights up. This LED remains lit as long as the unit is on.
   - ↳ The start screen appears on the touchscreen of the Easypad and the system's self-adjustment routine starts running (for approx. 1 minute). The rotating element rotates briefly clockwise and counterclockwise. The diaphragm moves into position. The forehead and temple supports on the panoramic unit open and close and then stop moving in fully opened position.
   - ↳ On completion of the self-adjustment routine, the main menu appears on the touchscreen. Help message H301 prompts you to move the unit into the starting position.
3. Press the R key.
   - ↳ The unit moves to its starting position.
4. Call the Service menu and the Service routine S002.3 (see Service Manual).
5. Use the arrow keys (**A**) in *selection field 1* to select the kV/mA level **62kV/8mA**.
6. Use the arrow keys (**A**) in *selection field 2* to select the radiation time **0.5 s.**

Performing measurements

7. Initiate the radiation. Hold the release button pressed until the set radiation time has expired.
   CAUTION! Activating the release button triggers X-rays

kV – verification

Analyzing measurements

➢ Read the voltage values on the Mult-O-Meter.

- The value for the voltage displayed on the Mult-O-Meter must correspond to the 62 kV selected in the service routine. The permissible tolerance is ± 10 %..
- If the measured values **do not fall within the permissible tolerance** range, replace the tube assembly (see Service Manual).
- If the measured values fall within the permissible tolerance range, finalize the measurement.

Exposure Time Verification

Analyzing measurements

➢ Read the radiation time on the Mult-O-Meter.

- The value for the radiation time displayed on the Mult-O-Meter must correspond to the radiation time of **0.5 s** selected in the service routine. The permissible tolerance is ± 10 %.
- If the measured radiation time does *not* fall within the permissible tolerance, replace the *tube assembly* (see Service Manual).
- If the measured radiation time falls within the permissible tolerance, finalize the measurement.

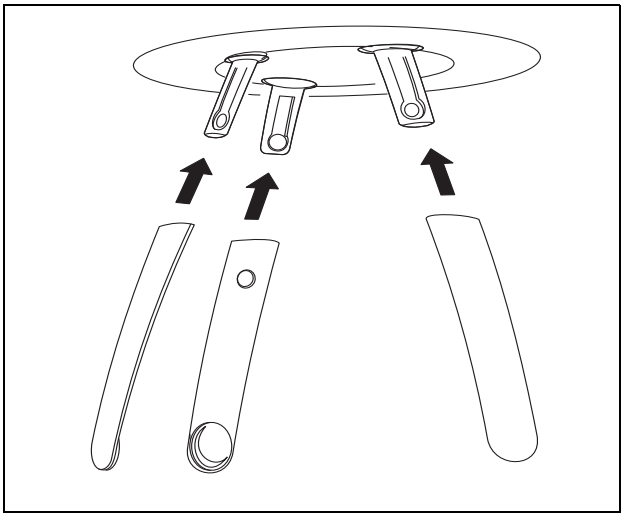
Finalizing the measurement

➢ Exit the service routine.

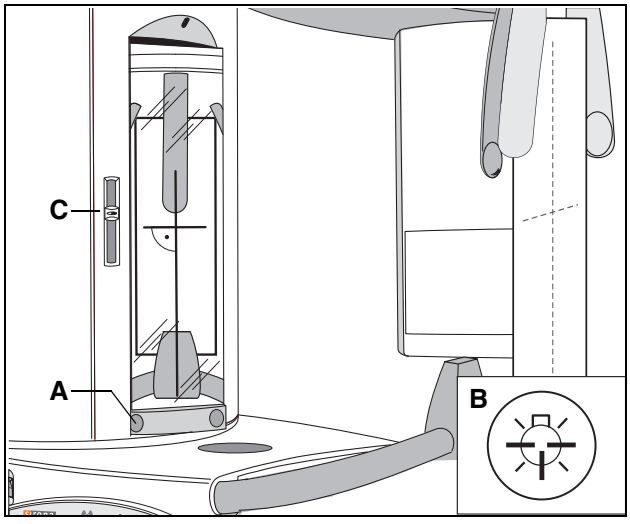
➢ Switch off the unit (see Operating Instructions).

8.5 Checking the laser for USA/Canada only

1.



2.



1. Insert the forehead and temple supports.

2. Check the laser:

- Fasten a piece of white cardboard between the temple supports.
- Swivel the mirror by pressing the left recess **A** on the touch bar.
- Switch on the **light localizer** with key **B** on the Easypad. **The Lasers generate a red line.**

WARNING

Class 1 radiation is emitted during installation. Always keep eyes a minimum distance of 100 mm away from the laser. Do not stare into the beam.

SAG laser (vertical line)

The light beam must strike the center of the head support in a vertical direction.

FH laser (horizontal line)

The light beam must strike the FH line of the sheet of cardboard attached to the head support. It must be possible to displace the light beam vertically using slide C. Unwanted movement of the FH light localizer is not permitted.

IMPORTANT

To adjust the lasers, see Maintenance Instructions.
No controls are available to adjust the laser power.

Label

LASER KLASSE 1
CLASS 1 LASER PRODUCT
APPAREIL A ´LASER DE CLASSE 1
Date of manufacture:
August 2007
Complies with 21 CFR 1040.10 and 1040.11
except for deviations pursant to
Laser Notice No. 50, dated (June 24, 2007)
Sirona Dental Systems GmbH
Fabrikstr. 31
D-64625 Bensheim, Germany
Manufactured in Bensheim

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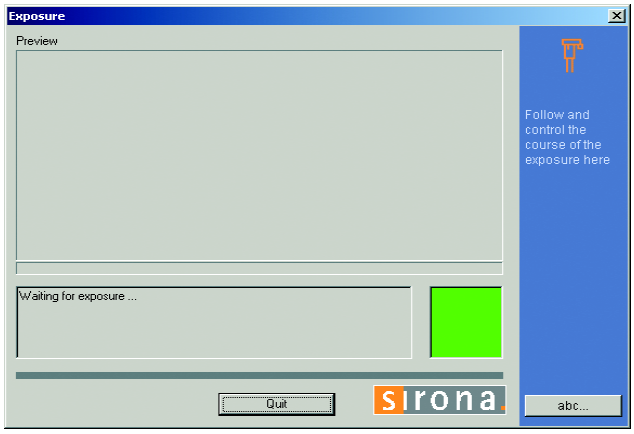
The Dental Company

9 Checking the system adjustment

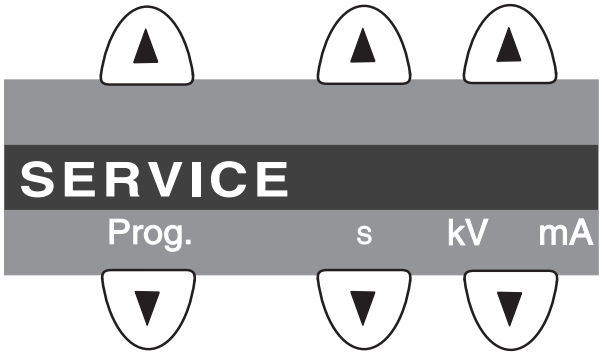
ORTHOPHOS XG 3

9.1 Test exposures

1.



2.



9.1.1 Test exposure menu

The **panoramic X-ray unit** is already completely adjusted on delivery. Check the adjustment using the **TEST EXPOSURE** menu to make sure that the unit was not inadvertently deadjusted during transport.

The **TEST EXPOSURE** menu is started from **SIDEXIS XG**:

UTILITIES → CONSTANCY TEST → XCXP → SELECT X-RAY DEVICE → SERVICE EXPOSURE → SELECT X-RAY COMPONENT → DIAPHRAGM TEST EXPOSURE

IMPORTANT

*The **SELECT X-RAY DEVICE** and **SELECT X-RAY COMPONENT** dialogs appear only if several x-ray devices or x-ray components are available for selection.*

IMPORTANT

*When you open the **TEST EXPOSURE** menu, the unit switches from the user mode to the PC service mode logged by the PC. The service mode is indicated by the **SERVICE** display on the Multipad (**2.**).*

*In the **PC service mode**, the control options that are available on the Multipad are determined by SIDEXIS and the currently selected service routine. General control of the unit by means of the Multipad (as in the user mode) is not possible in this mode.*

The test exposures are used to check the adjustment. They can be started without a password.

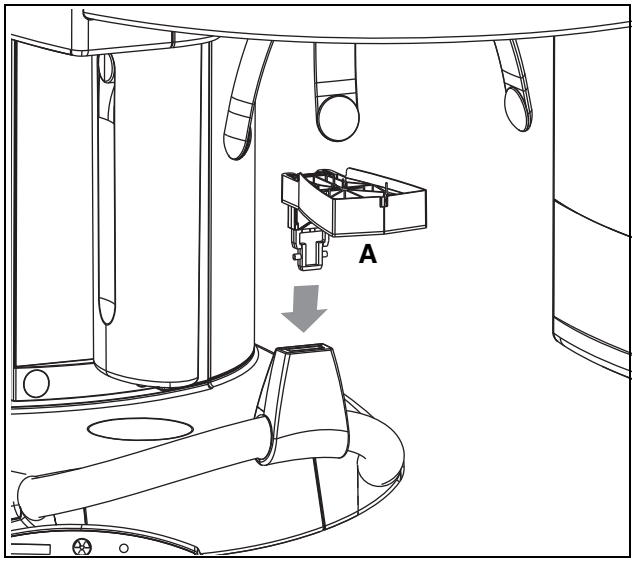
You can switch between the **PAN DIAPHRAGM** and **PAN SYMMETRY** menus by clicking the corresponding **tab** with the mouse. To quit the **TEST EXPOSURE** menu, click **CANCEL**.

Displays on the Multipad

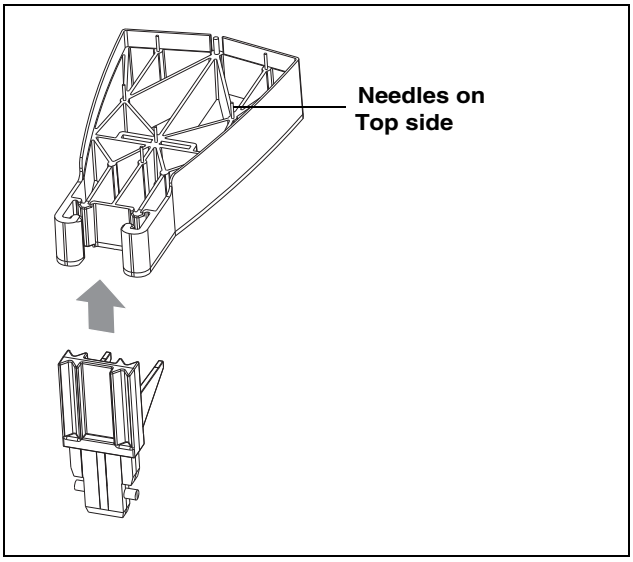
During the adjustment procedure, different service routines are started from SIDEXIS; they are displayed one after the other on the Multipad.

If there are any error messages displayed during adjustment, please follow the instructions provided in the Service Manual.

1.



2.

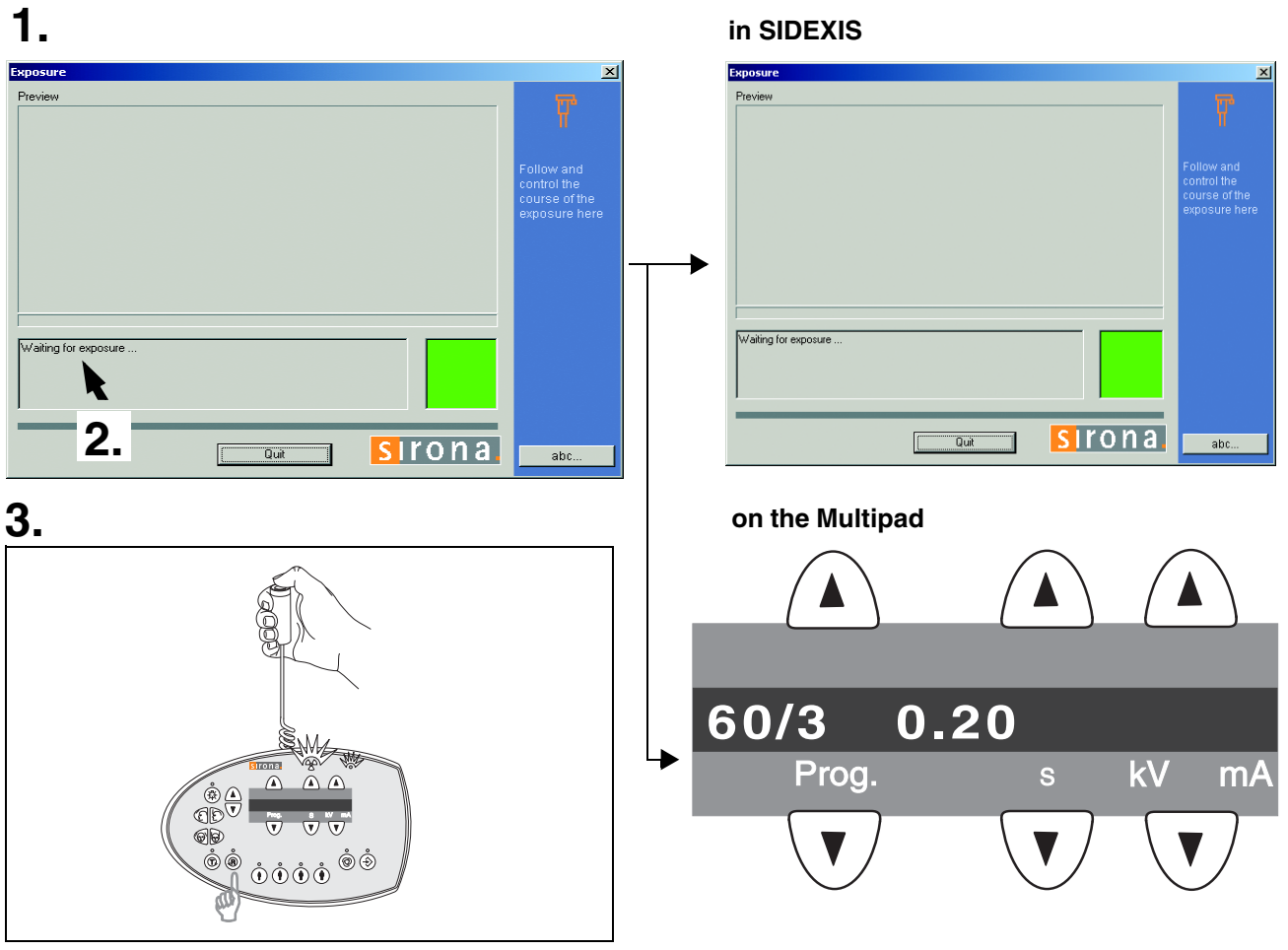


9.1.2 Needle phantom

In order to check the **pan symmetry** (see section 9.1.4), you must insert needle phantom **A** in the bite block holder of the panoramic X-ray unit.

IMPORTANT

*When fitting the needle phantom, make sure that it is **correctly oriented**. For the adjustment of the X-ray unit, the phantom must be fitted in such a way that the **needles point upward** (2.).*



9.1.3 Checking the diaphragm adjustment

WARNING

When performing the following tests, be sure to observe the radiation protection regulations applicable in your country (see Operating Instructions).

- Plug the sensor into the sensor slot on the panoramic X-ray unit.

IMPORTANT

*The needle phantom must **not** be fitted on the bite block holder on the panoramic X-ray unit.*

- Open the **TEST EXPOSURE** menu (see section 9.1.1).

1. Select the **PAN - DIAPHRAGM** submenu.
2. To make SIDEXIS XG ready for exposure: Click **IMAGE ACQUISITION**

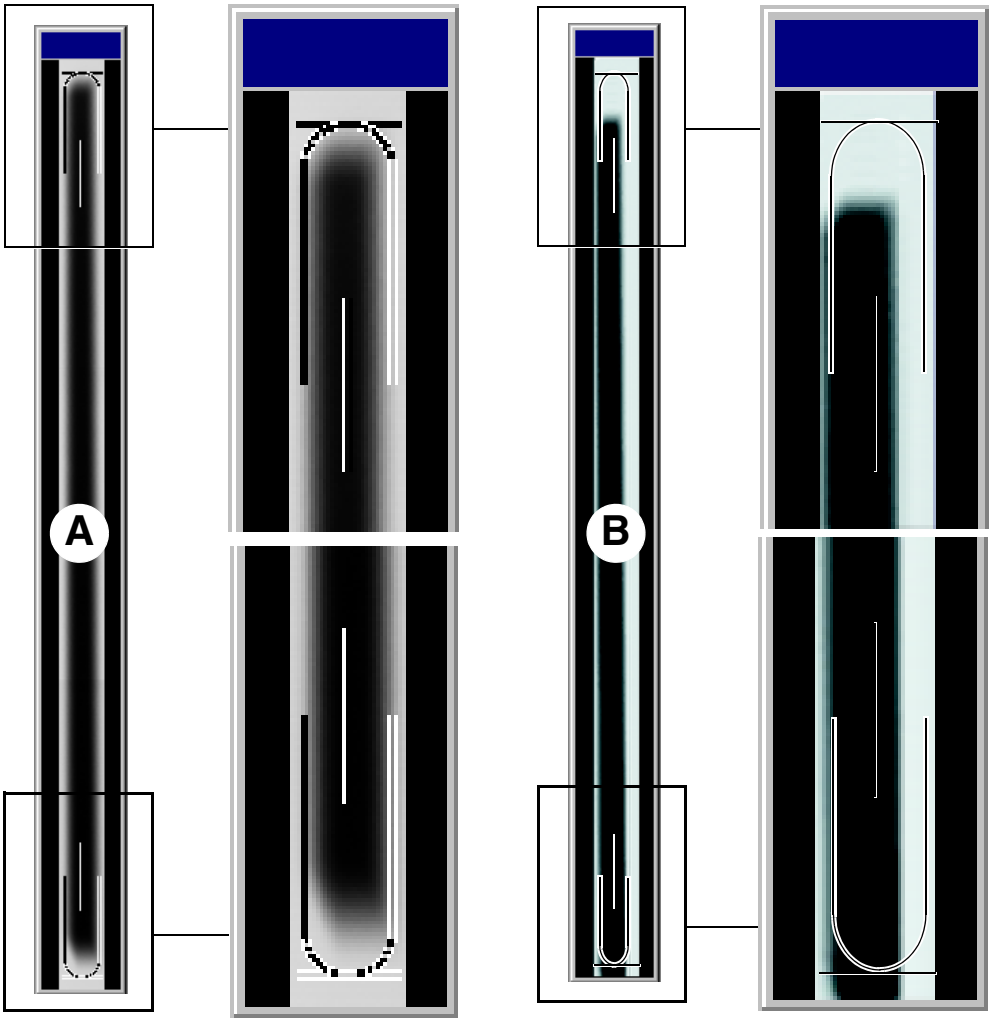
The exposure dialog box showing the exposure status appears in Sidexis.

The initialization status is visualized by a progress indicator on the Multipad.

The initialization procedure is completed when the exposure parameters of service routine **S030.2** (60 kV / 3 mA; 0.20 s) are displayed and the progress indicator disappears.

3. Take an exposure (60 kV/3 mA):
   - Press the **R key** on the Multipad to move the unit back to the starting position.
   - Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

4.



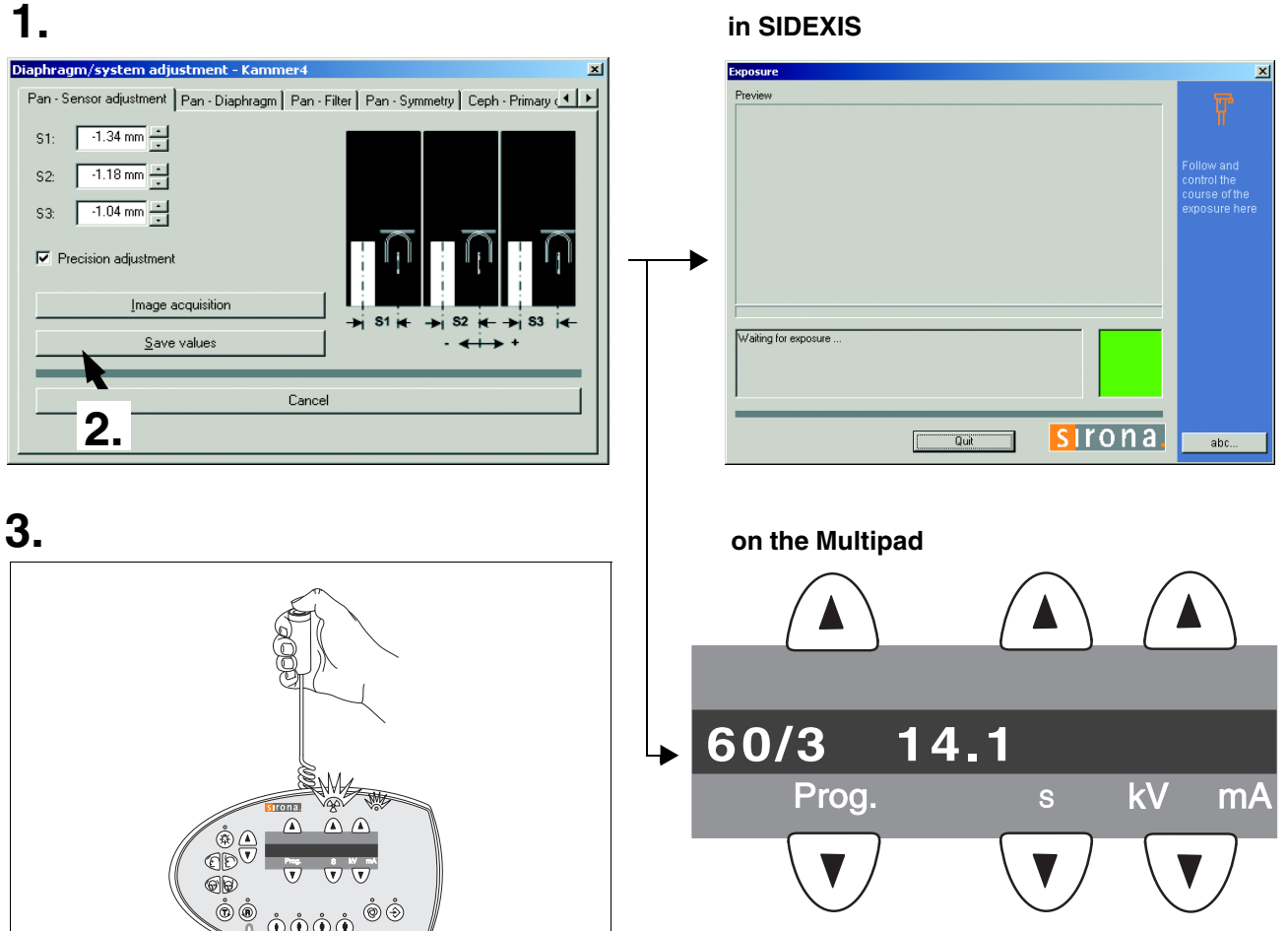
Adjustment: ok **Adjustment: not ok**

4. Evaluate the X-ray image:

- **The exposed diaphragm area must lie horizontally centered in the image field as well as inside the superimposed auxiliary lines A.**
- **A white border surrounding the image on all sides must be visible. The maximum density must lie in the center of the diaphragm area A.**

IMPORTANT

*If these criteria are not fulfilled **B**, the pan diaphragm must be adjusted. The procedure for adjusting the unit is described in the Appendix (see section 11.2) and in the ORTHOPHOS Service Manual.*



9.1.4 Checking the PAN symmetry

WARNING

When performing the following tests, be sure to observe the radiation protection regulations applicable in your country (see Operating Instructions).

- Insert the needle phantom in the bite block holder of the panoramic X-ray unit (see page 85).

IMPORTANT

The sensor must be plugged into the sensor slot on the panoramic X-ray unit.

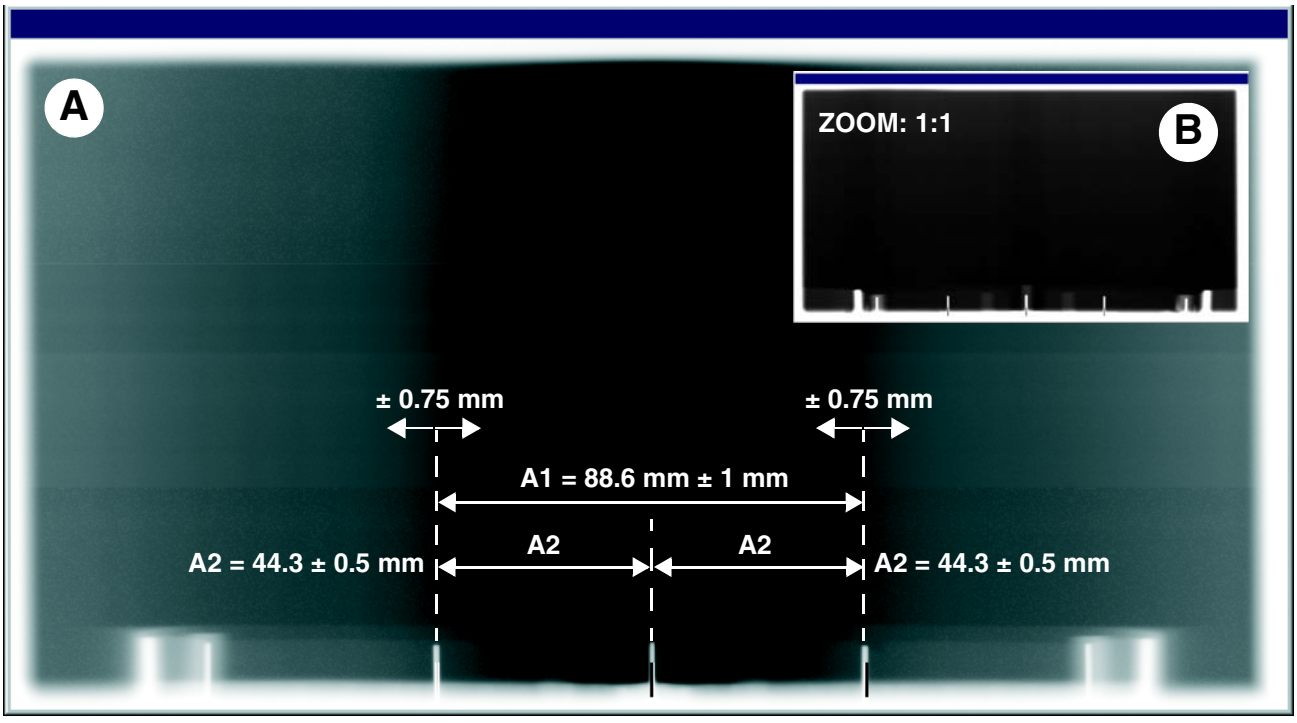
1. Go to the **PAN - SYMMETRY** submenu.
2. To make SIDEXIS XG ready for exposure:
   Click **IMAGE ACQUISITION**

   The exposure dialog box showing the exposure status appears in Sidexis.

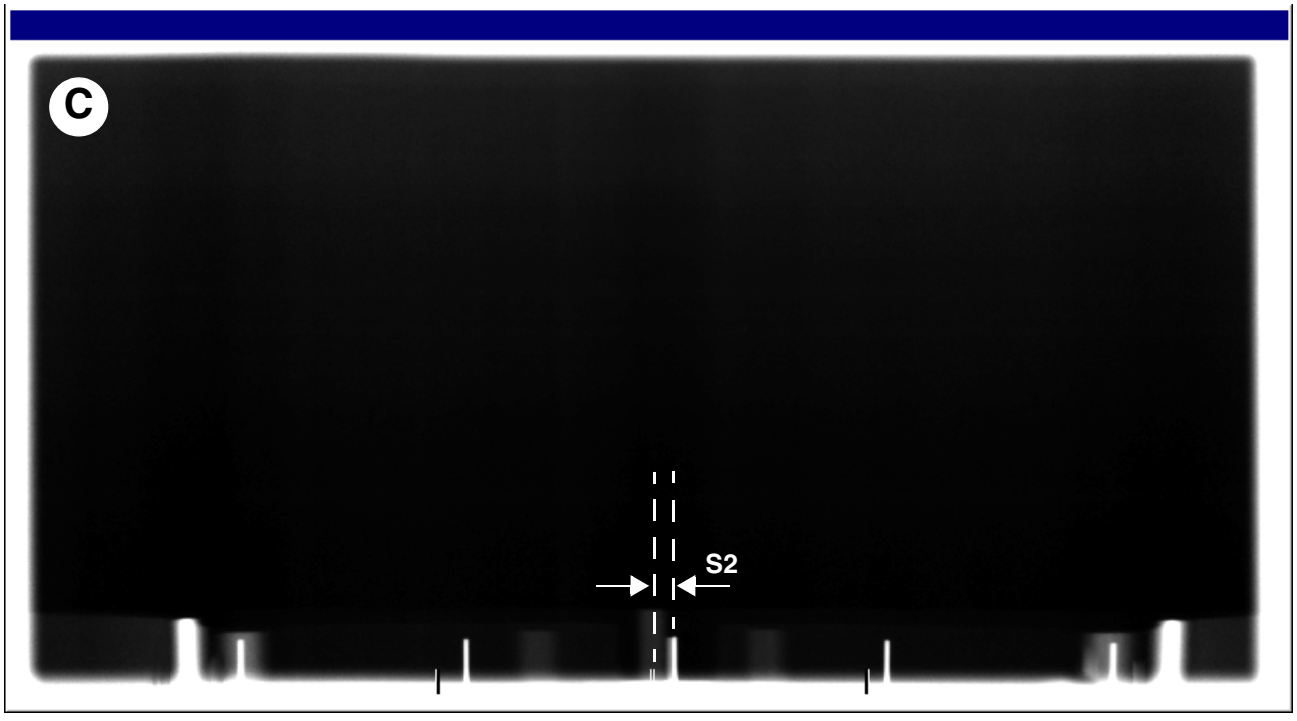
   The initialization status is visualized by a progress indicator on the Multipad.

   The initialization procedure is completed when the exposure parameters of service routine **S010.2** (60 kV / 3 mA; 14.1 s) are displayed and the progress indicator disappears.
3. Take an exposure (60 kV/3 mA):
   – Press the **R key** on the Multipad to move the unit back to the starting position.
   – Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

4.



Adjustment: ok (length measurement with SIDEXIS)



Adjustment: not ok

4. Evaluate the X-ray image:

- **The shadow of the center needle, the needle image and the auxiliary line must be coincident and located behind each other.**
  A tolerance (offset of needle from the central auxiliary line) of ± 0.75 mm is admissible A.
- **Distance A1 must be 88.6 ± 1 mm A.**
- **Distances A2 must be identical, each being 44.3 ± 0.5 mm A.**
- **A white border surrounding the image on all sides must be visible B.**

IMPORTANT

*If one of these criteria is not fulfilled **C**, the pan symmetry must be adjusted. The procedure for adjusting the unit is described in the Appendix (see section 11.2) and in the ORTHOPHOS XG Service Manual.*

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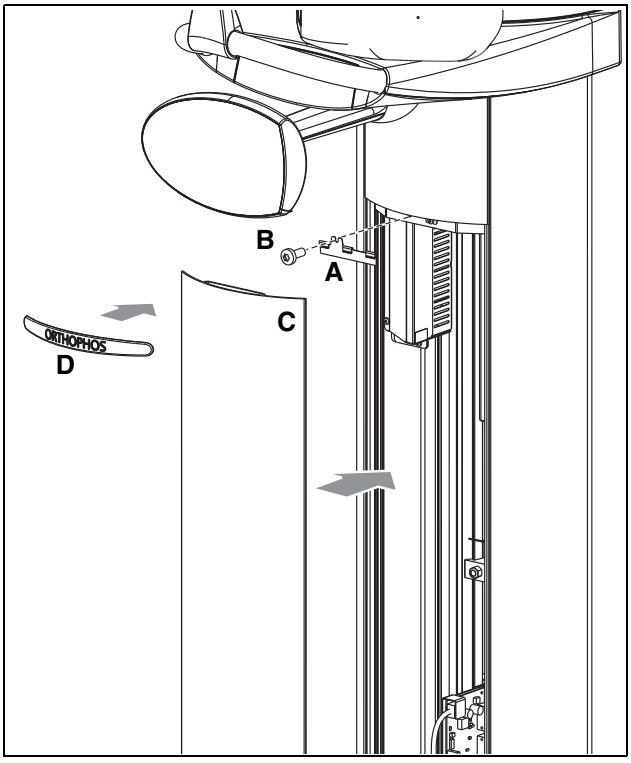
10 Final work

ORTHOPHOS XG 3

10.1 Attaching the profile covers

1.



1. Attach the profile cover.
- Screw holder **A** onto the column with screw **B**.
- Clip on profile **C**.
- Insert intermediate piece **D** in the gap.

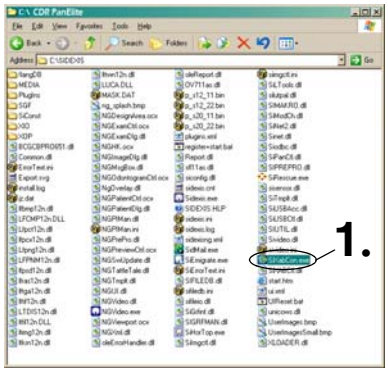
IMPORTANT
*Make sure that intermediate piece **D** lies flush on the stand surface.*

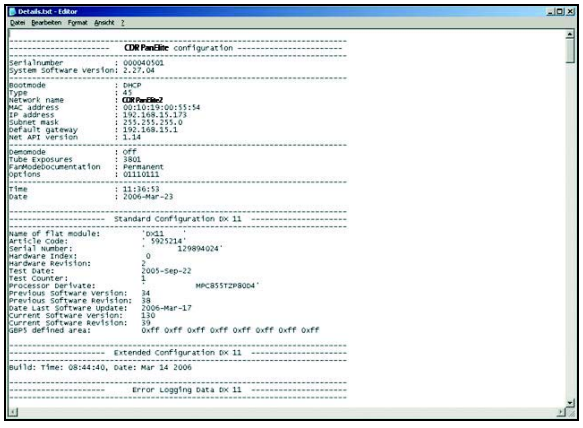
- **The unit is now ready for operation.**

10.2Selecting More details

1.

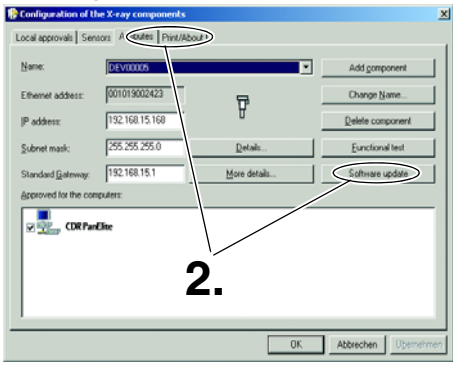
Opening SIXABCON.exe

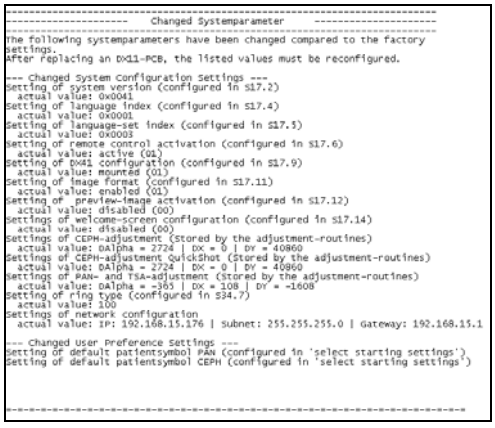




2.

Opening the EXTENDED DETAILS menu





1. Open the SIXABCON utility from the SIDEXIS XG program folder.
   Click the SIXABCON.exe file (see screenshot) or use the pull-down menus **PROGRAM → SIDEXIS → CONFIGURATION OF THE X-RAY COMPONENTS**.
2. Open the **MORE DETAILS** menu.
   Click the **PROPERTIES** tab, then click **MORE DETAILS**.
   The current parameters are retrieved from the unit and stored as an XML file in the PDATA/P2K_Config folder using the unit's network name.
   This step may take up to 30 seconds.

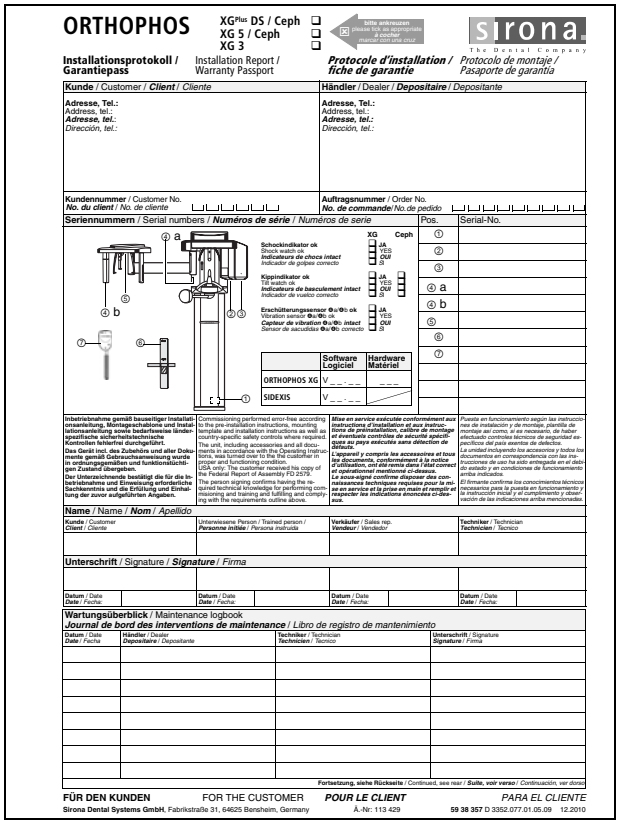
- After the parameters are read, an editor displaying the XML file is opened automatically.

IMPORTANT

You can scroll down further in the file using the scroll bar. The "Changed system parameters", i.e. the system parameters that were modified in relation to the factory setting, are displayed there. This is especially interesting after a module change. The parameter settings can thus be easily traced.

10.3Installation Report/Warranty Passport

1.



ORTHOPHOS XG^{Plus} DS / Ceph ❑ XG 5 / Ceph ❑ XG 3 ❑

bitte ankreuzen / please tick as appropriate / à cocher / marcar con/ma pour

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Installationsprotokoll / Garantiepass — Installation Report / Warranty Passport — ***Protocole d'installation / fiche de garantie*** — *Protocolo de montaje / Pasaporte de garantía*

Kunde / Customer / ***Client*** / *Cliente* — **Händler** / Dealer / ***Depositaire*** / *Depositante*

Adresse, Tel.: Address, tel.: ***Adresse, tel.:*** *Dirección, tel.:*

Kundennummer / Customer No. ***No. du client*** / *No. de cliente*

Auftragsnummer / Order No. ***No. de commande*** / *No.de pedido*

Seriennummern / Serial numbers / ***Numéros de série*** / *Numéros de serie*

Pos.	Serial-No.
①	
②	
③	
④ a	
④ b	
⑤	
⑥	
⑦	

Schockindikator ok / Shock watch ok / ***Indicateurs de chocs intact*** / *Indicador de golpes correcto* — XG: ☐ sA ☐ YES ☐ *OUI* ☐ SI

Kippindikator ok / Tilt watch ok / ***Indicateur de basculement intact*** / *Indicador de vuelco correcto* — XG: ☐ sA ☐ YES ☐ *OUI* ☐ SI — Ceph: ☐ ☐

Erschütterungssensor ⊕a/⊕b ok / Vibration sensor ⊕a/⊕b ok / ***Capteur de vibration ⊕a/⊕b intact*** / *Sensor de sacudidas ⊕a/⊕b correcto* — XG: ☐ sA ☐ YES ☐ *OUI* ☐ SI

	Software Logiciel	Hardware Matériel
ORTHOPHOS XG	V _ _ . _ _ . _ _	_ _ _
SIDEXIS	V _ _ . _ _ . _ _	

Inbetriebnahme gemäß bauseitiger Installationsanleitung, Montageschablone und Installationsanleitung sowie bederfalls länderspezifische sicherheitstechnische Kontrollen fehlerfrei durchgeführt.
Das Gerät incl. des Zubehörs und aller Dokumente gemäß Gebrauchsanweisung wurde in ordnungsgemäßen und funktionstüchtigen Zustand übergeben.
Der Unterzeichnende bestätigt die für die Inbetriebnahme und Einweisung erforderliche Sachkenntnis und die Erfüllung und Einhaltung der zuvor aufgeführten Angaben.

Commissioning performed error-free according to the pre-installation instructions, mounting template and installation instructions as well as country-specific safety controls where required. The unit, including accessories and all documents in accordance with the Operating Instructions, was turned over to the the customer in proper and functioning condition. The person signing confirms having the required technical knowledge for performing commissioning and training and fulfilling and complying with the requirements outline above.

Mise en service exécutée conformément aux instructions d'installation et aux instructions de préinstallation, cahire de montage et éventuels contrôles de sécurité spécifiques au pays exécutés sans détection de défauts.
L'appareil y compris les accessoires et tous les documents, conformément à la notice d'utilisation, ont été remis dans l'état correct et opérationnel mentionné ci-dessus.
Le sous-signé confirme disposer des connaissances techniques requises pour la mise en service et la prise en main et remplir et respecter les indications énoncées ci-dessus.

Puesta en funcionamiento según las instrucciones de instalación y de montaje, plantilla de montaje así como, si es necesario, de haber efectuado controles técnicos de seguridad específicos del país exentos de defectos.
La unidad incluyendo los accesorios y todos los documentos en correspondencia con las instrucciones de uso ha sido entregada en el debido estado de funcionamiento.
El firmante confirma los conocimientos técnicos necesarios para la puesta en funcionamiento y la instrucción inicial y el cumplimiento y observación de las indicaciones arriba mencionadas.

Name / Name / ***Nom*** / *Apellido*

Kunde / *Customer* / ***Client*** / *Cliente*	Unterwiesene Person / Trained person / ***Personne initiée*** / *Persona instruida*	**Verkäufer** / Sales rep. / ***Vendeur*** / *Vendedor*	**Techniker** / Technician / ***Technicien*** / *Tecnico*

Unterschrift / Signature / ***Signature*** / *Firma*

Datum / Date / ***Date*** / *Fecha*		Datum / Date / ***Date*** / *Fecha*		Datum / Date / ***Date*** / *Fecha*		Datum / Date / ***Date*** / *Fecha*	

Wartungsüberblick / Maintenance logbook
Journal de bord des interventions de maintenance / *Libro de registro de mantenimiento*

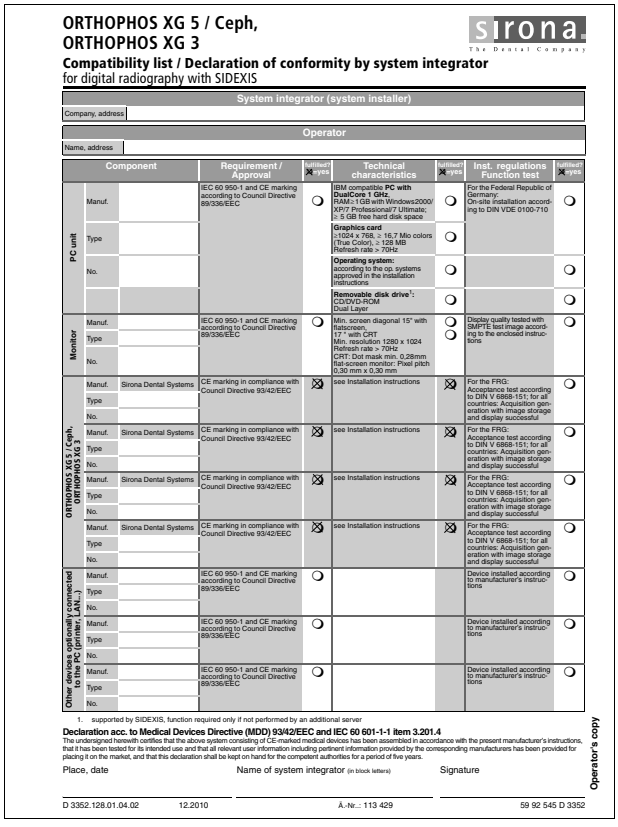
Datum / Date / ***Date*** / *Fecha*	Händler / Dealer / ***Depositaire*** / *Depositante*	Techniker / Technician / ***Technicien*** / *Tecnico*	Unterschrift / Signature / ***Signature*** / *Firma*

Fortsetzung, siehe Rückseite / Continued, see rear / ***Suite, voir verso*** / *Continuación, ver dorso*

FÜR DEN KUNDEN FOR THE CUSTOMER ***POUR LE CLIENT*** *PARA EL CLIENTE*

Sirona Dental Systems GmbH, Fabrikstraße 31, 64625 Bensheim, Germany — A.-Nr: 113 429 — **59 98 357** D 3352.077.01.05.09 12.2010

2.



ORTHOPHOS XG 5 / Ceph, ORTHOPHOS XG 3

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Compatibility list / Declaration of conformity by system integrator
for digital radiography with SIDEXIS

System integrator (system installer)
Company, address

Operator
Name, address

Component			Requirement / Approval	✖ if met / yes	Technical characteristics	✖ if met / yes	Inst. regulations Function test	✖ if met / yes
PC unit	Manuf.		IEC 60 950-1 and CE marking according to Council Directive 89/336/EEC	❍	IBM compatible **PC with DualCore 1 GHz**, RAM.: 1 GB with Windows2000/ XP/7 Professional/7 Ultimate: ≥ 5 GB free hard disk space	❍	For the Federal Republic of Germany: On-site installation according to DIN VDE 0100-710	❍
	Type				**Graphics card** ≥1024 x 768, ≥ 16.7 Mio colors (True Color), ≥ 128 MB Refresh rate > 70Hz	❍		
	No.				**Operating system:** according to the op. systems approved in the installation instructions	❍		❍
					Removable disk drive[1]: CD/DVD-ROM Dual Layer	❍		❍
Monitor	Manuf.		IEC 60 950-1 and CE marking according to Council Directive 89/336/EEC	❍	Min. screen diagonal 15" with flatscreen, 17.1" with CRT Min. resolution 1280 x 1024 Refresh rate > 70Hz CRT: Dot mask min. 0.28mm flat-screen monitor: Pixel pitch 0.30 mm x 0.30 mm	❍ ❍	Display quality tested with SMPTE test image according to the enclosed instructions	❍
	Type							
	No.							
ORTHOPHOS XG 5 / Ceph, ORTHOPHOS XG 3	Manuf.	Sirona Dental Systems	CE marking in compliance with Council Directive 93/42/EEC	☒	see Installation instructions	☒	For the FRG: Acceptance test according to DIN V 6868-151; for all countries: Acquisition generation with image storage and display successful	❍
	Type							
	No.							
	Manuf.	Sirona Dental Systems	CE marking in compliance with Council Directive 93/42/EEC	☒	see Installation instructions	☒	For the FRG: Acceptance test according to DIN V 6868-151; for all countries: Acquisition generation with image storage and display successful	❍
	Type							
	No.							
	Manuf.	Sirona Dental Systems	CE marking in compliance with Council Directive 93/42/EEC	☒	see Installation instructions	☒	For the FRG: Acceptance test according to DIN V 6868-151; for all countries: Acquisition generation with image storage and display successful	❍
	Type							
	No.							
	Manuf.	Sirona Dental Systems	CE marking in compliance with Council Directive 93/42/EEC	☒	see Installation instructions	☒	For the FRG: Acceptance test according to DIN V 6868-151; for all countries: Acquisition generation with image storage and display successful	❍
	Type							
	No.							
Other devices optional/ connected to the PC (printer, LAN,...)	Manuf.		IEC 60 950-1 and CE marking according to Council Directive 89/336/EEC	❍			Device installed according to manufacturer's instructions	❍
	Type							
	No.							
	Manuf.		IEC 60 950-1 and CE marking according to Council Directive 89/336/EEC	❍			Device installed according to manufacturer's instructions	❍
	Type							
	No.							
	Manuf.		IEC 60 950-1 and CE marking according to Council Directive 89/336/EEC	❍			Device installed according to manufacturer's instructions	❍
	Type							
	No.							

1. supported by SIDEXIS, function required only if not performed by an additional server

Declaration acc. to Medical Devices Directive (MDD) 93/42/EEC and IEC 60 601-1-1 item 3.201.4
The undersigned herewith certifies that the above system consisting of CE-marked medical devices has been assembled in accordance with the present manufacturer's instructions, that it has been tested for its intended use and that all relevant user information including pertinent information provided by the corresponding manufacturers has been provided for placing it on the market, and that this declaration shall be kept on hand for the competent authorities for a period of five years.

Place, date — Name of system integrator (in block letters) — Signature

Operator's copy

D 3352.128.01.04.02 12.2010 — A.-Nr.: 113 429 — 59 92 545 D 3352

1. Enter the serial numbers and software version on the attached document “Installation Report and Warranty Passport”.

– Complete the remaining points together with the customer.
– Hand over the copy marked **FOR THE CUSTOMER** to the customer*.
– The copy marked **FOR THE DEALER** is for the customer records kept by the dealer.

Please fax the **FOR THE DEALER** copy back to SIRONA immediately after the installation.

NOTICE

Please note that any warranty claims can be fulfilled only if the completely and legibly completed "Installation Report/ Warranty Passport" document is available at SIRONA immediately after the installation.

2. Complete the Declaration of Conformity.

The system integrator certifies the CE conformity of the installed SIDEXIS system by means of the compatibility list.

The list is designed so that only the white fields must be filled in. The original list remains in the practice, the copy is given to the system integrator.

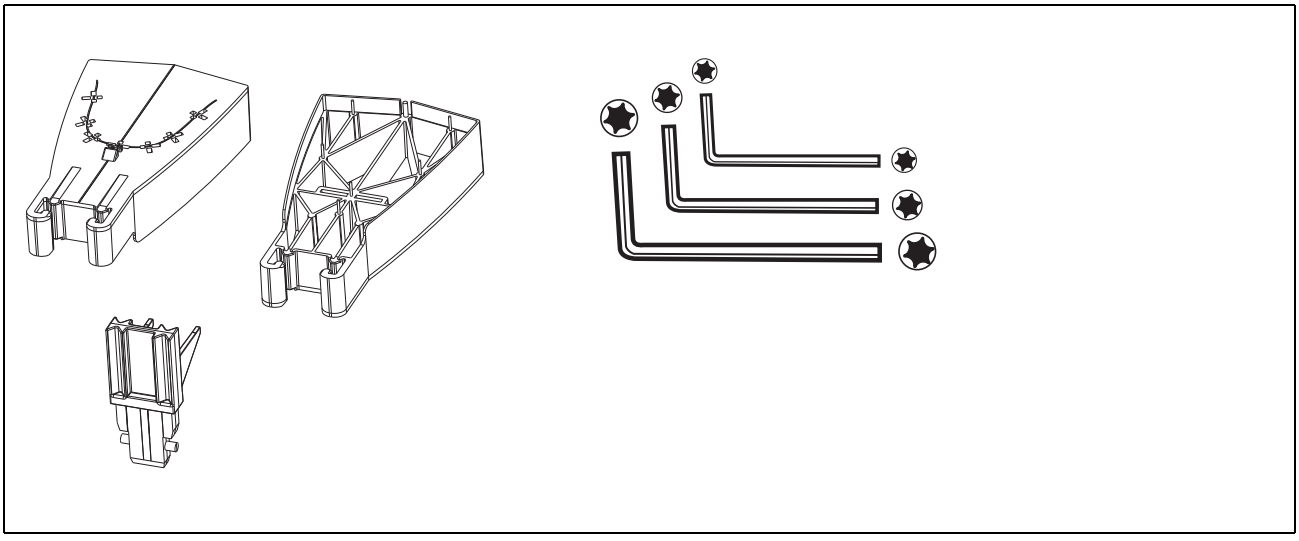
Only for Germany

Perform the acceptance test required according to Art. 16 of the X-Ray Ordinance now. Use the test phantom, plug-in plate, contrast elements, needle phantom and relevant instructions included in delivery for this purpose.

* In Germany: File in the X-ray System Logbook.

10.4Unit handover

1.



1. Give the customer the technical documentation as well as all of the patient positioning aids, test phantoms and special tools included in delivery, including packaging. These are important components of the unit and must be stored carefully.

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11 Appendix

ORTHOPHOS XG 3

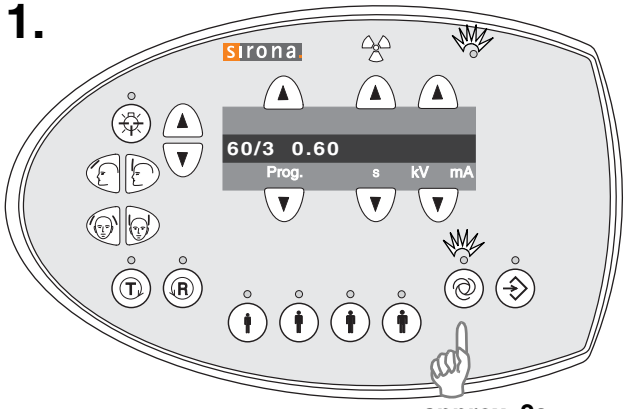
11.1Service routines (for installation)

Service routine	Designation	Described in this Appendix	Page
S17.2	Configuring the hardware version	Configuring the hardware version	103
S17.6	Configuring the remote control	Enable/disable the remote control	104
S18.2	Setting the maximum Travel height for the unit	Setting the maximum travel height	105
S18.3	Undoing the maximum travel height setting	Undo the maximum travel height setting	106
S18.5	Setting the minimum Travel height for the unit	Setting the minimum travel height	107
S18.6	Canceling the limitation of minimum travel height setting	Canceling the limitation of the minimum travel height setting	108

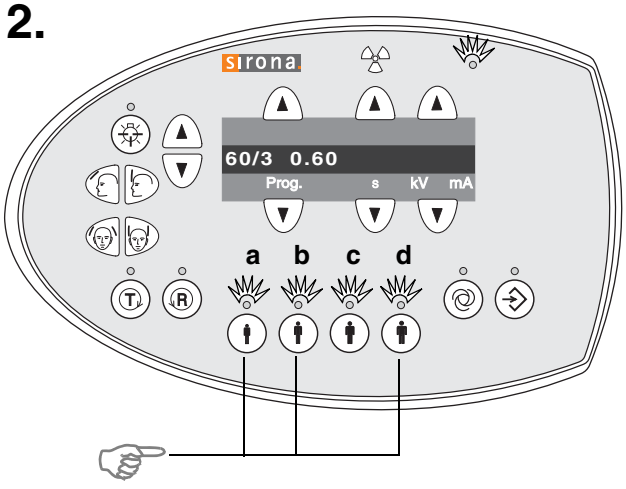
The service routines listed above may be required for installation of the ORTHOPHOS XG X-ray unit and are described in this Appendix.

A complete list and comprehensive description of all service routines can be found in the Service Manual.

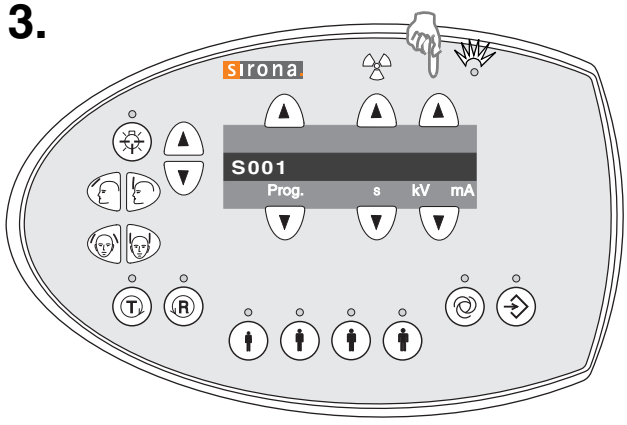
1.



2.



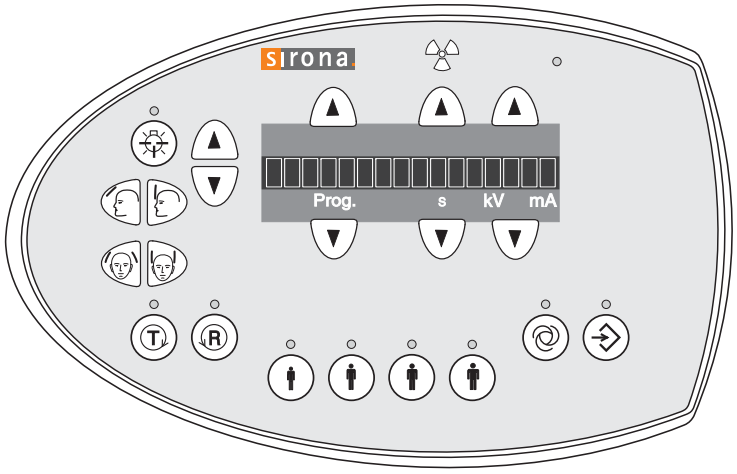
3.



11.1.1Selecting the Service menu

1. Press the Service key for approx. 2 seconds.
2. Then press the patient symbol keys in the following order within 4 s: **b** – **d** – **a**.

   After you have entered the key combination correctly, the Service menu appears.
3. To quit the Service menu and return to the main menu, press the **up arrow key** ▲ at the very right.



11.1.2 Displays and symbols on the Multipad

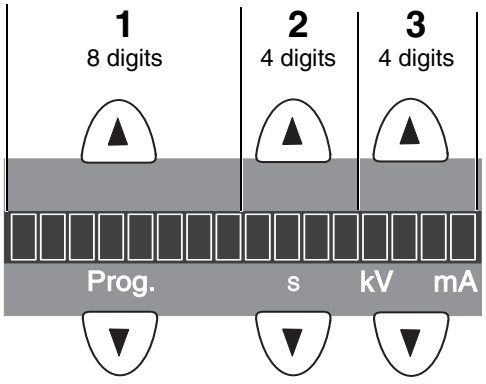
From the Multipad, you can start all available service routines and perform important system settings and tests as well as calibrations.

Depending on the procedure step, different hints, error messages and parameters are displayed in a context-sensitive way on the Multipad:

Display:

Error messages: Ex yy zz (see Service Manual)

Service routines, test steps, values, codes, etc. in selection fields 1-3:



Keys:

Patient symbol keys a - d: a b c d — different functions, depending on the service routine

Memory key: For saving an input

Service key: (formerly AES key) — different functions depending on service routine, but in most cases for confirming a selection or jumping to the next test step

Test key: For starting a test

Return key: For moving the unit to the starting position or confirming a save operation

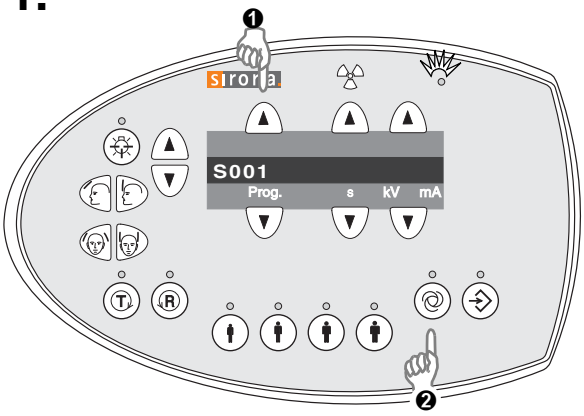
Light localizer key: For switching on the light localizers

Up/Down keys: For moving the unit up and down

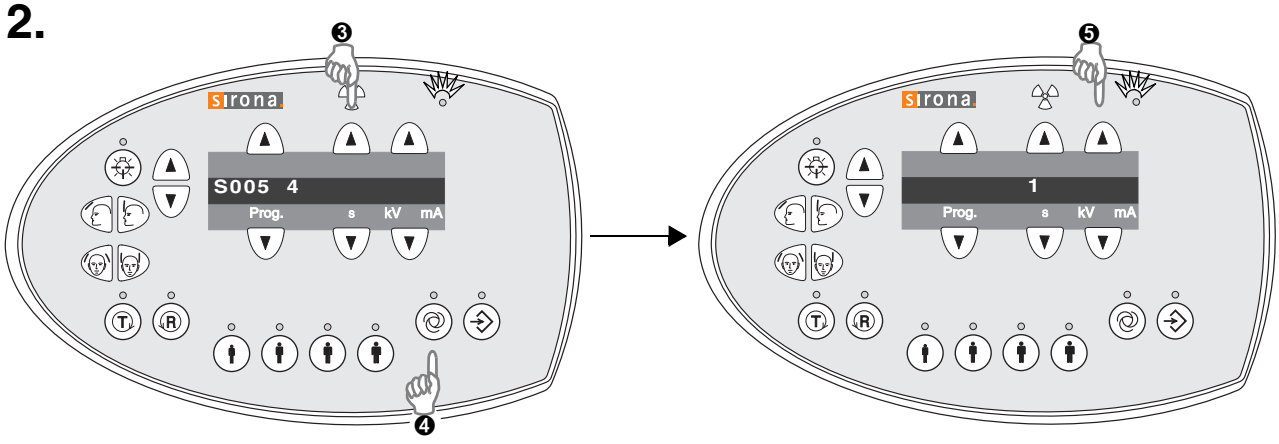
Forehead support key: For moving the forehead sup port

Temple support key: For moving the temple support

1.



2.



11.1.3Selecting service routines

- Select the Service menu (see page 99).

Selecting a service routine

1. Select the desired service routine using the arrow keys of selection field 1 and confirm your selection by pressing the **Service key**.

IMPORTANT

If the selected service routine comprises several test steps, the first selectable test step is displayed in selection field 2.

Selecting a test step

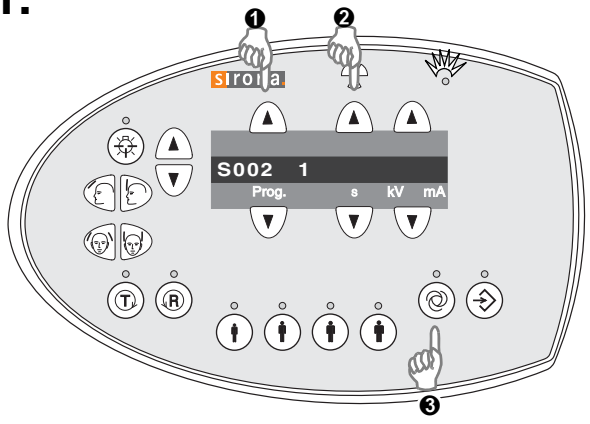
2. Select the desired test step using the arrow keys of selection field 2 and confirm your selection by pressing the **Service key**.

Quitting the service routine

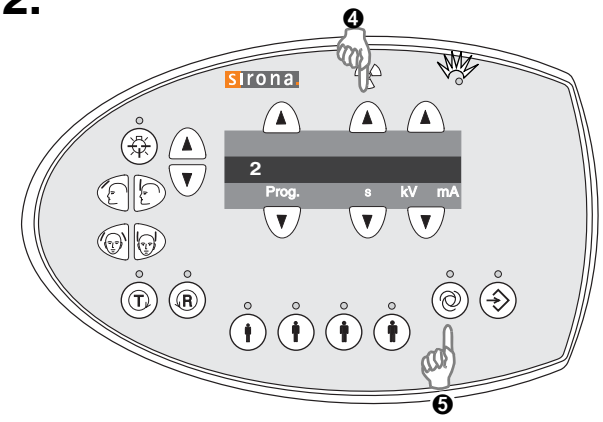
To return to the service routine selection menu, press the **Service key** or the right **up arrow key**.

To quit the Service menu and return to the main menu, press the **up arrow key** at the very right.

1.



2.



11.1.4Service routines with security access

IMPORTANT

A security code is required for accessing service routines involving functions such as radiation release or editing of configuration data or stored values.
This procedure prevents the inadvertent selection or activation of these service routines.

To select a service routine or test step with security access, proceed as follows:

WARNING

Be sure to observe the radiation protection regulations applicable in your country.

Selecting the service routine/test step

1. Select the service routine or the test step and confirm your selection with the **Service key**.

   After you have confirmed your selection, a 0 appears in selection field 1.

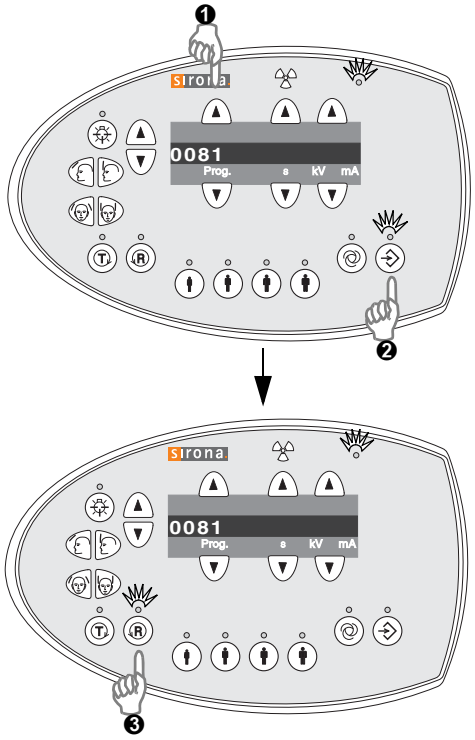
Confirming the security access

2. Confirm the security access by once again selecting the number of the main routine (in our example 2) in selection field 2 with the **arrow keys**.

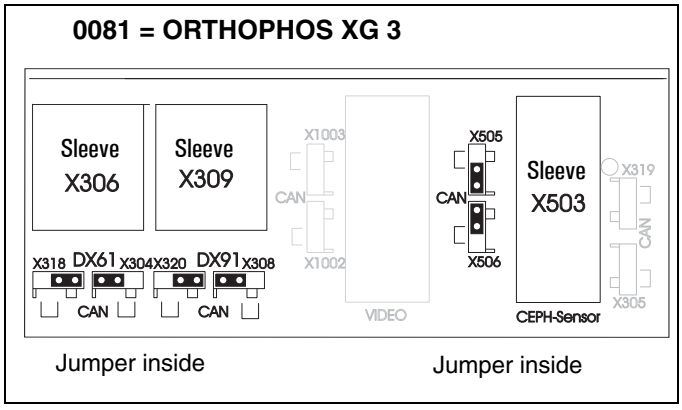
   Confirm your input by pressing the **Service key**.

   Following this double selection and confirmation, the service routine is activated.

1.



2.



11.1.5Configuring the system version (S017.2)

- Select service routine **S017.2** with security access (see section 11.1.3 and 11.1.4).

  Following selection, the ID of the currently selected system version appears in selection field 1.

1. Select the desired system version **0081** using the**arrow keys** of selection field 1 and confirm your selection by pressing the **Service key**.

0081 = ORTHOPHOS XG 3 (fixed diapraghm)

After the selection of the system version, the LED above the **Memory key** Ⓢ ***lights up.***

To save the selected system version, first press the **Memory key** Ⓢ (the LED above the **R key** lights up) and then the **R key** Ⓡ**.**

IMPORTANT

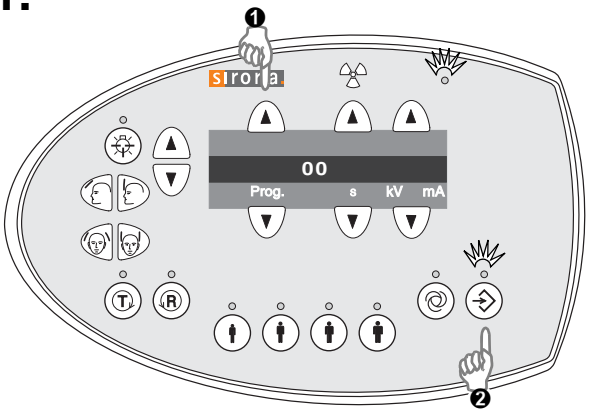
The set value is permanently saved as the relevant system version.

2. Check the jumper settings of sockets 306, 309 and 503 on board DX1.

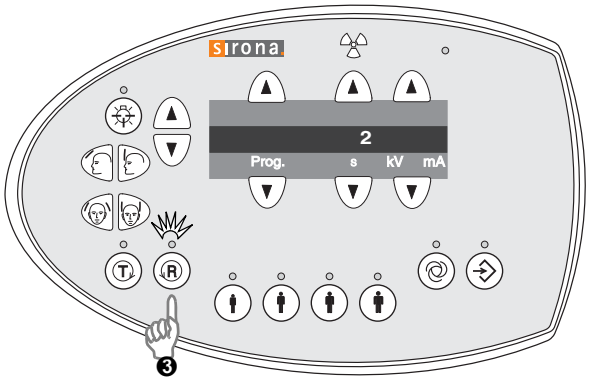
0081 = Jumpers in inner position

- Quit service routine S017
  (see page 101).
- Switch the unit OFF and restart it.
  After the restart, the selected system version is active.

1.



2.



11.1.6Configuring the remote control (S017.6)

- Select service routine **S017.6** with security access (see sections 11.1.3 and 11.1.4).

  Following selection, the ID of the currently selected system configuration appears in selection field 1.

1. Select the desired system configuration using the **arrow keys** of selection field 1, and confirm your selection by pressing the **Service key**.

00=Remote control disabled
01=Remote control enabled

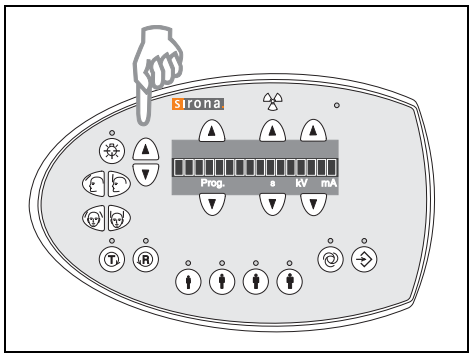
After the selection of the system version, the LED above the **Memory key** ⏎ ***lights up.***

To save the selected system version, first press the **Memory key** ⏎ (the LED above the **R key** lights up) and then the **R key** Ⓡ **.**

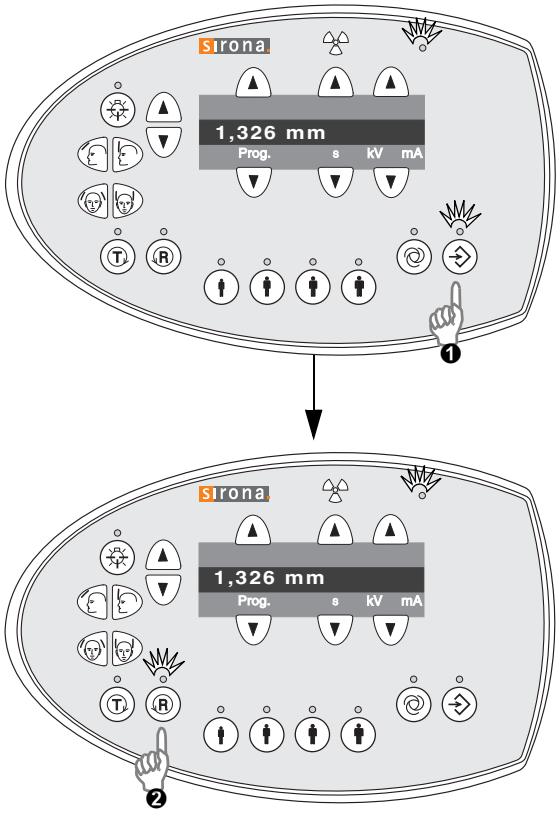
IMPORTANT
The set value is permanently saved as the relevant system configuration.

- Quit service routine S017. Switch the unit OFF and restart it.
- After the restart, the new system configuration is active.

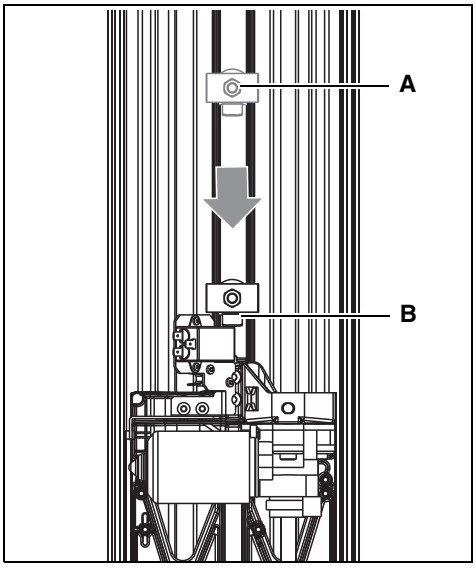
1.



2.



3.



11.1.7Setting the maximum travel height (S018.2)

1. Move the unit to the required maximum travel height by pressing the Up/Down keys in the user mode.

IMPORTANT

The travel height currently set (= current height at "center of bite block") is displayed as a numerical value.

- Select service routine **S018.2**.

IMPORTANT

The current travel height minus 10 mm is displayed and saved.

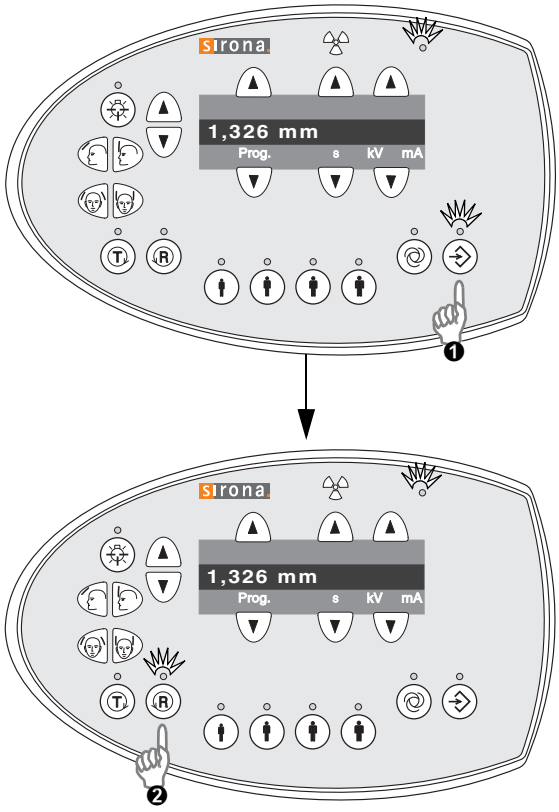
2. Confirm the travel height by pressing the **save values** key ❶ and the **Service key** ❷ .

Setting the mechanical limit stop on the unit

3. Loosen the nut **A** and slide the mechanical limit stop **B** for the limit switch to the new maximum position until it switches. Retighten the nut firmly.

- Quit service routine S018 (see page 101).
- Switch the unit OFF and restart it.
  After the restart, the new maximum travel height is active.

1.



11.1.8Canceling the maximum travel height setting

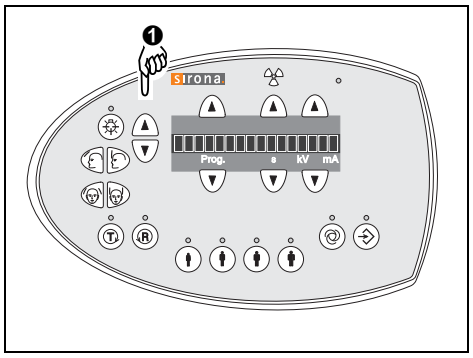
- Select service routine **S018.3**.

IMPORTANT
The current travel height minus 10 mm is displayed and saved.

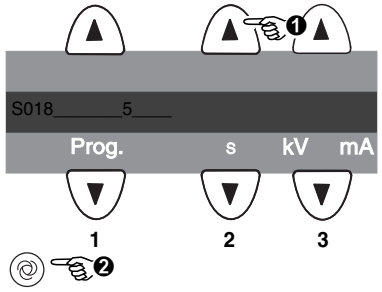
1. To cancel the maximum travel height setting, first press the **Memory key ❶** and then the **R key ❷** .

- Quit service routine S018 (see page 101).
- Switch the unit OFF and restart it.
  After the restart, the previously set maximum travel height is undone.

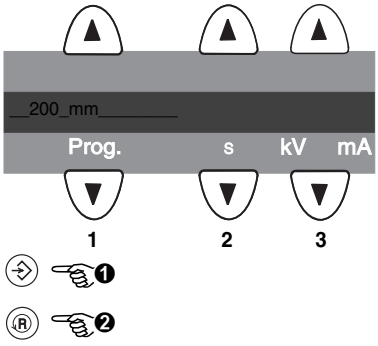
1.



2.



3.



11.1.9Setting the minimum travel height (S018.5)

1. Move the unit to the required minimum travel height by pressing the **Up/Down keys** in the user mode.

IMPORTANT

Programming the minimum travel height is possible only for a system height that is below the lower correction switch level (< position value of 1500)!

2. Select test step 2 in selection field 2 with the **arrow keys** and confirm your selection by pressing the **Service key** ⓢ.
The current height position is displayed in selection field 1. The LED above the **Memory key** ⓜ is lit.

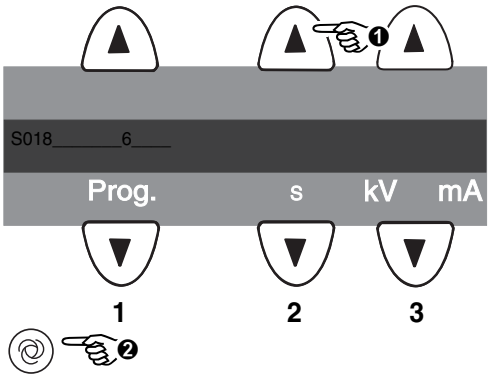
3. To save the minimum travel height, first press the **Memory key** ⓜ (the LED above the R key lights up), and then the **R key** Ⓡ..

IMPORTANT

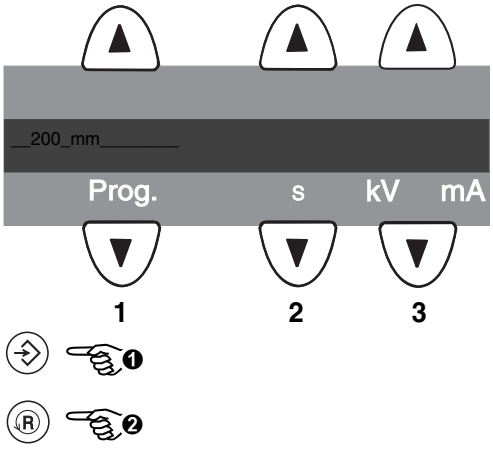
The limitation of the minimum travel height is purely software based. The lower limit switch is not adapted to the new minimum travel height.

- Quit service routine S018 (see page 101).
- Switch the unit OFF and restart it.
  After the restart, the new minimum travel height is active.

1.



2.



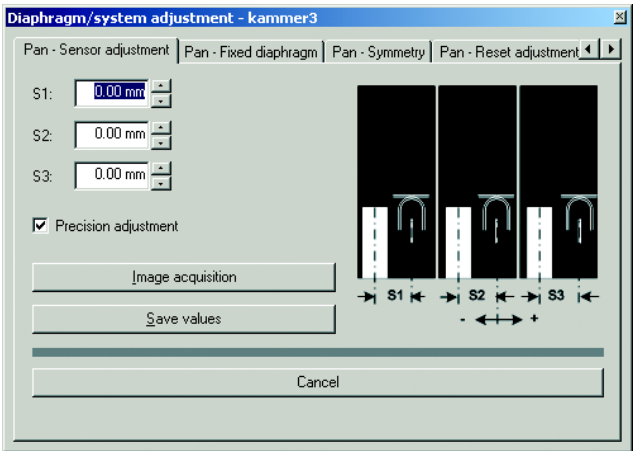
11.1.10Canceling the minimum travel height setting (S018.6)

1. Select test step 6 in selection field 2 with the **arrow keys** and confirm your selection by pressing the **Service key** .
   The current height position is displayed in selection field 1. The LED above the **Memory key** lights up.
2. To cancel the limitation for the minimum travel height, first press the **Memory key** (LED above the R key lights up), and then the **R key** **.**

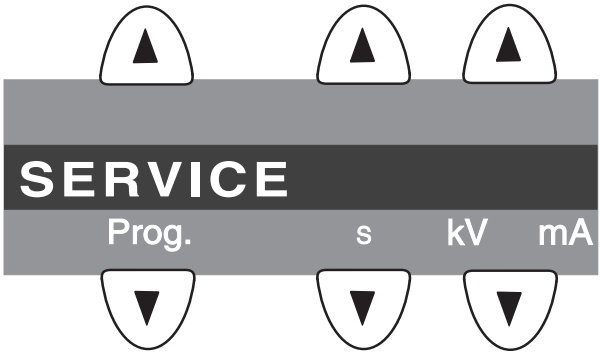
- Quit service routine S018 (see page 101).
- Switch the unit OFF and restart it.
  After the restart, the previously set minimum travel height is cancelled.

11.2Adjusting the panoramic X-ray unit

1.



2.



11.2.1Diaphragm/system adjustment menu

The **DIAPHRAGM/SYSTEM ADJUSTMENT** menu guides you through the adjustment of the panoramic unit. This service routine is started from **SIDEXIS XG**:

UTILITIES → CONSTANCY TEST → XCXP → SELECT X-RAY DEVICE → SERVICE EXPOSURE → PASSWORD INPUT → SELECT X-RAY COMPONENT → DIAPHRAGM TEST EXPOSURE

IMPORTANT

The **DIAPHRAGM/SYSTEM ADJUSTMENT** *menu is password-protected. As password, enter the first four digits of the current system date (PC) in reverse order.*

Example: On 05/30/2004, the service password is ***5003***

IMPORTANT

The ***SELECT X-RAY DEVICE*** *and* ***SELECT X-RAY COMPONENT*** *dialogs appear only if several x-ray devices or x-ray components are available for selection.*

IMPORTANT

When you open the ***DIAPHRAGM/SYSTEM ADJUSTMENT*** *menu, the unit switches from the user mode to the PC service mode logged by the PC. The service mode is indicated by the* ***SERVICE*** *display on the Multipad (****2.****).*

In the ***PC service mode****, the control options that are available on the Multipad are determined by SIDEXIS and the currently selected service routine. General control of the unit by means of the Multipad (as in the user mode) is not possible in this mode.*

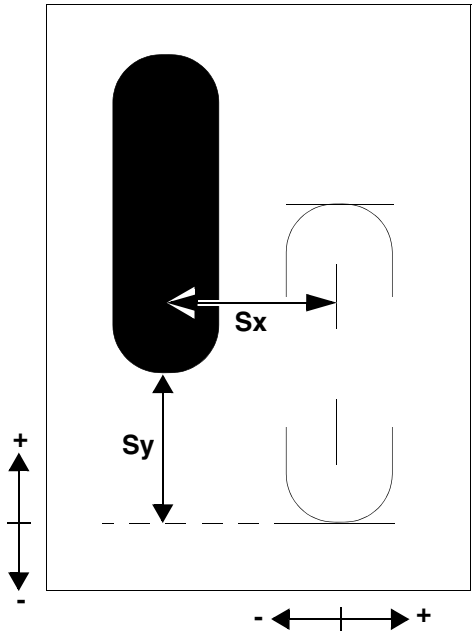
The **DIAPHRAGM/SYSTEM ADJUSTMENT** menu has 5 submenus:

- PAN - Sensor adjustment
- PAN - Diaphragm
- PAN - Symmetry
- PAN - Reset adjustment
- Sirona Service Sheet (for internal use only)

You can change between the individual submenus by clicking the **menu tabs** with the mouse. To quit the **DIAPHRAGM/SYSTEM ADJUSTMENT** menu, click **CANCEL**.

Direction of displacement of the exposed image area/ Information on the pictographs in the system adjustment menu

The Pan - Sensor adjustment, Pan - Filter and Pan - Symmetry submenus each contain a pictographic representation of the expected adjustment image to help you perform the adjustment. The shifting directions indicated by the plus and minus signs located below and next to the pictograph refer to shifting of the exposed image area in the direction of the stationary auxiliary lines (see the following example):



In the example the exposed image area is offset to the left by the value **Sx** and upward by the value **Sy**. In order to shift the image area so that it comes to lie inside the auxiliary lines, you must enter …

- **Sx (shift to the right) with a positive sign**
- **Sy (shift downward) with a negative sign**

in the text boxes of the submenu.

IMPORTANT

The pan diaphragm cannot be adjusted via the software, i.e. the pan diaphragm must be adjusted by moving it mechanically (see section 11.2.6).

Generally speaking, the exposed image area must always be shifted toward the auxiliary lines:

- **Shift to the right or upward**: Enter the value (measured offset from the auxiliary line) with a **positive sign or mechanically shift the diaphragm to to the right or upward**

- **Shift to the left or downward**: Enter the value (measured offset from the auxiliary line) with a **negative sign or mechanically shift the diaphragm to the left or downward**:

Displays on the Multipad

During the adjustment procedure, different service routines are started from Sidexis; they are displayed one after the other on the Multipad.

If there are any error messages displayed during adjustment, please follow the instructions provided in the Service Manual.

For adjustment, please proceed as described in the following sections.

11.2.2Important information concerning adjustment

WARNING

When performing the following tests, be sure to observe the radiation protection regulations applicable in your country (see Operating Instructions).

WARNING

"Radiation" is signaled by an X-ray LED and a beep.

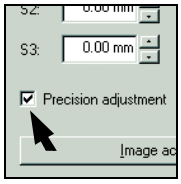
IMPORTANT

*Be sure to take screenshots of the **PAN - RESET ADJUSTMENT** menu before and after the adjustment (see section 11.2.8) and save them to the C:\SIDEXIS\XGRAW directory along with the time and date!*

IMPORTANT

Before starting the service routines for system adjustment, make sure that no unit movements are active (especially diaphragm travels)! Otherwise the system may become inoperable in rare cases.

Coarse and precision adjustment using the Diaphragm/system adjustment menu in SIDEXIS XG



IMPORTANT

The Pan - Sensor adjustment submenu contains a coarse adjustment and a precision adjustment (precision adjustment is preset). Always try to use precision adjustment first when adjusting the sensor. In most cases, previous coarse adjustment is not necessary.

With SIDEXIS Version V02.20 and higher, a message window indicates when a coarse adjustment is necessary.

Only if you cannot achieve your goal with precision adjustment, e.g. if the exposed area is completely outside the image field, should you perform a coarse and then a precision adjustment.

*If a coarse adjustment proves necessary, deactivate the **PRECISION ADJUSTMENT** check box and follow the adjustment steps described in the present chapter to perform a coarse adjustment.*

The steps and correction procedure required for coarse adjustment are identical to those for precision adjustment. The only difference between the two modes is the size of the image section considered. Furthermore, there are fewer auxiliary lines in the coarse adjustment mode.

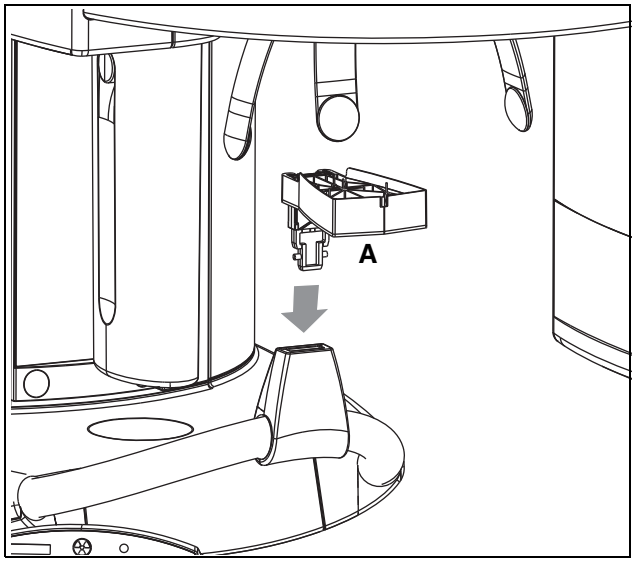
Default values in the Diaphragm/system adjustment menu in SIDEXIS XG

During the adjustment, the default adjustment values are displayed in the text boxes of the Diaphragm/system adjustment menu.

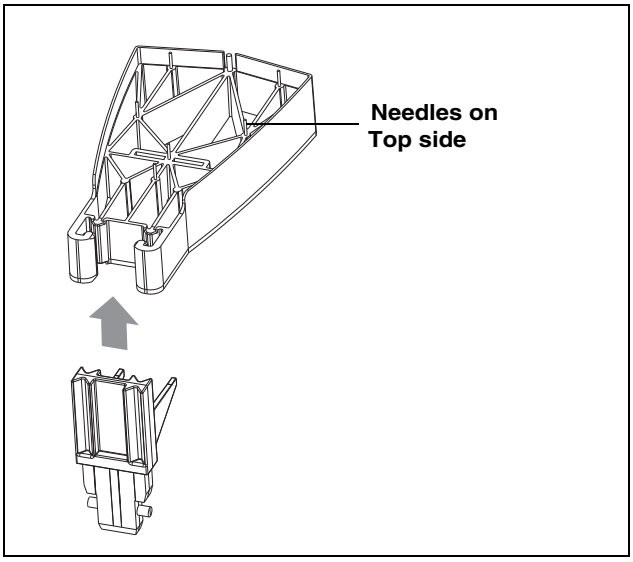
First perform the adjustment with these default values. If you do not attain the desired result via this automatic adjustment, you should determine the adjustment values manually by measuring the exposure with the SIDEXIS measuring ruler and then overwrite the default values in the menu.

This procedure is described in the following sections.

1.



2.



11.2.3PAN needle phantom

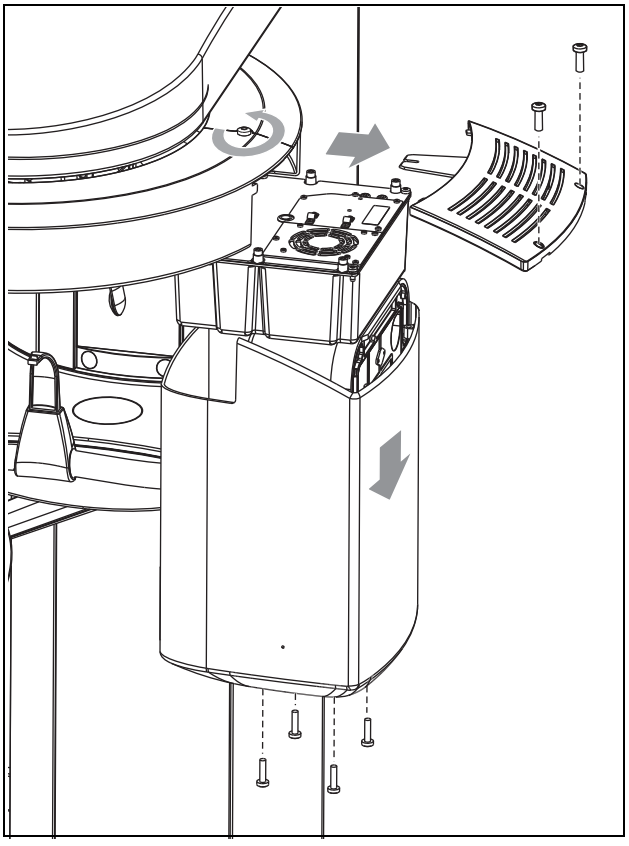
In order to perform the **PAN sensor adjustment** and the **symmetry adjustment** you must insert needle phantom **A** in the bite block holder of the panoramic X-ray unit.

The needle phantom must be removed from the bite block holder for the **pan diaphragm adjustment**.

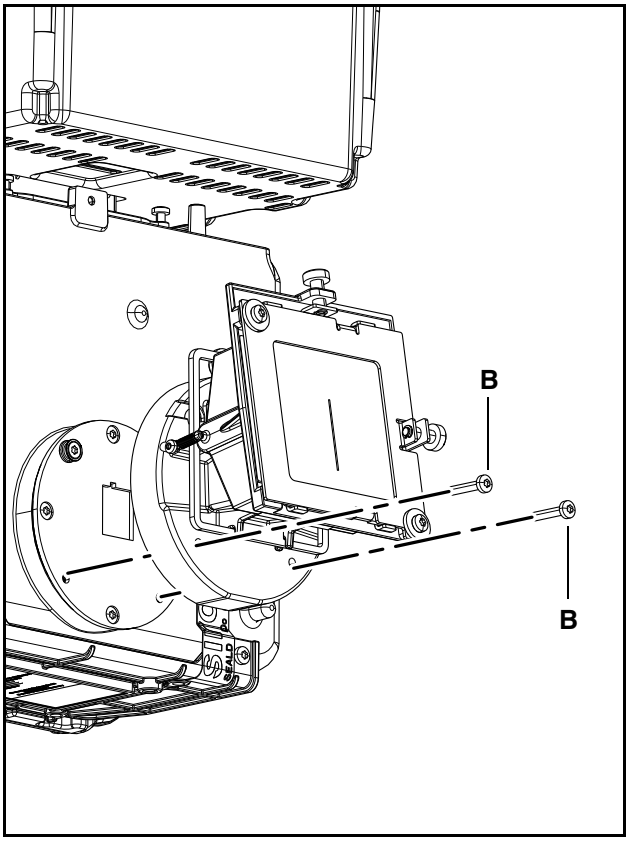
IMPORTANT

*When fitting the needle phantom, make sure that it is **correctly oriented**. For the adjustment of the X-ray unit, the phantom must be fitted in such a way that the **needles point upward** (2.).*

1.



2.



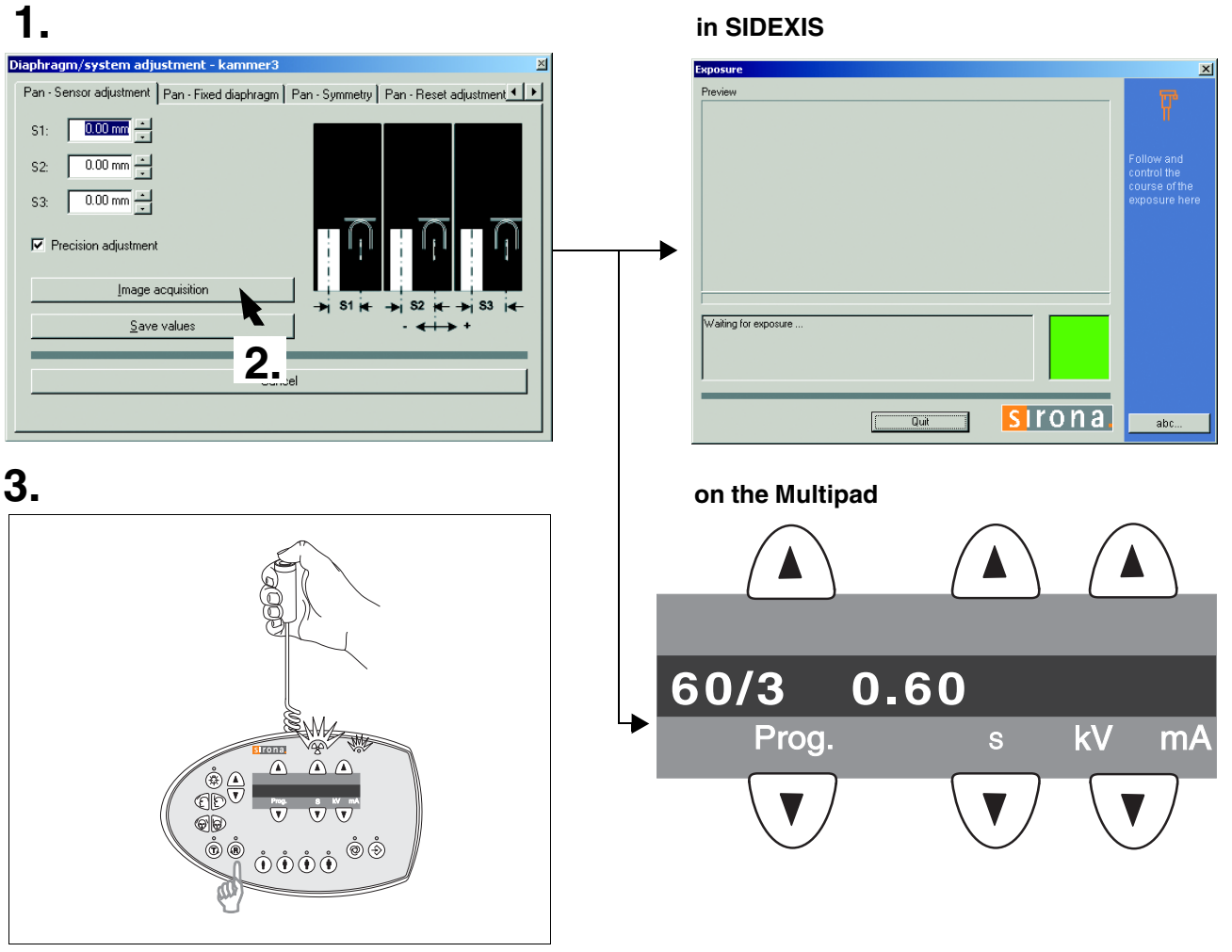
11.2.4Dismantling the fixed diaphragm

The fixed diaphragm must be dismantled in order to perform the sensor adjustment of the ORTHOPHOS XG3 X-ray unit. To do this, proceed as follows:

1. Remove the covers:
- Tube assembly, front
- Tube assembly, rear

2. Unscrew and remove the two screws (B) and take off the fixed diaphragm.

- Assemble by following the same procedure in reverse order.



11.2.5Adjusting the PAN sensor

- Dismantle the user fixed diaphragm (see page 113).
- Plug the sensor into the sensor slot on the panoramic X-ray unit.
- Insert the needle phantom in the bite block holder of the panoramic X-ray unit (see page 112).

1. Open the **PAN - SENSOR ADJUSTMENT** submenu (see section 11.2.1).

IMPORTANT

The menu provides a precision adjustment and a coarse adjustment. Always try to use precision adjustment first when adjusting the unit. In most cases, it is not necessary to perform a coarse adjustment prior to precision adjustment.

2. To make SIDEXIS XG ready for exposure:
   Click **IMAGE ACQUISITION**

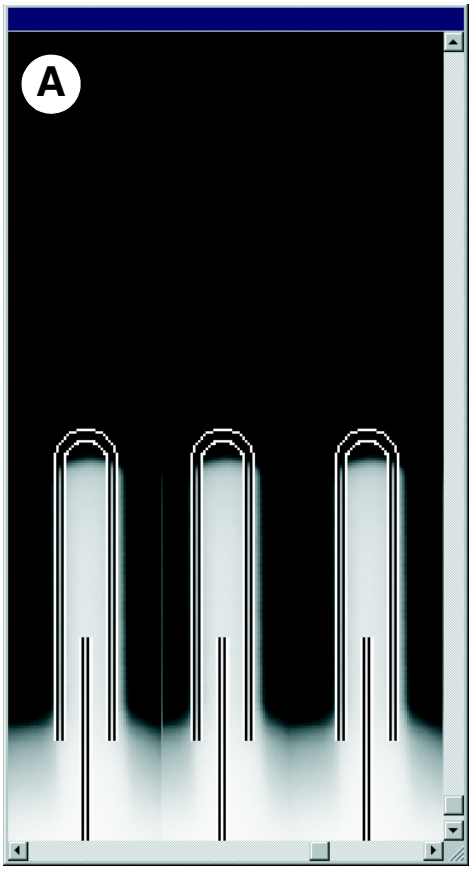
   The exposure dialog box showing the exposure status appears in Sidexis.

   The initialization status is visualized by a progress indicator on the Multipad.

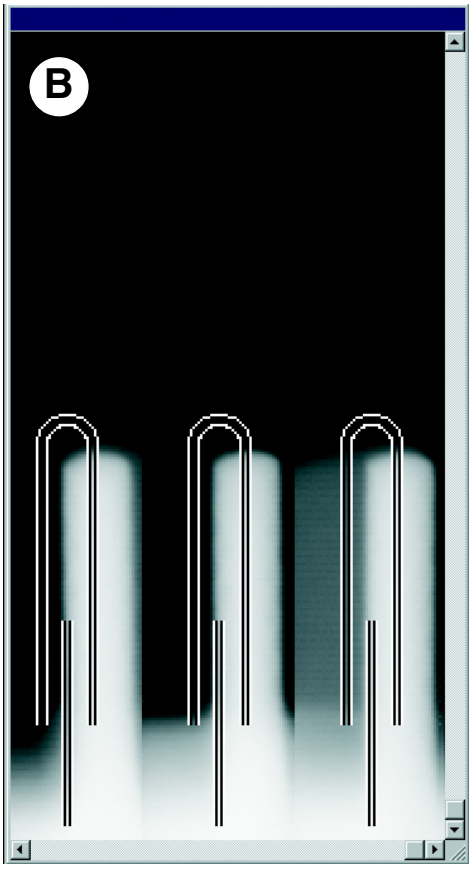
   The initialization procedure is completed when the exposure parameters of service routine **S010.1** (60 kV / 3 mA; 0.6 s) are displayed and the progress indicator disappears.

3. Take an exposure (60 kV/3 mA):
   – Press the **R key** on the Multipad to move the unit back to the starting position.
   – Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

4.



Adjustment: ok



Adjustment: not ok

4. Evaluate the X-ray image:

– **The three needle images must lie in the center of the exposed areas and inside the auxiliary lines A.**

IMPORTANT

*If these criteria are not fulfilled **(B)**, the PAN sensor must be adjusted.*

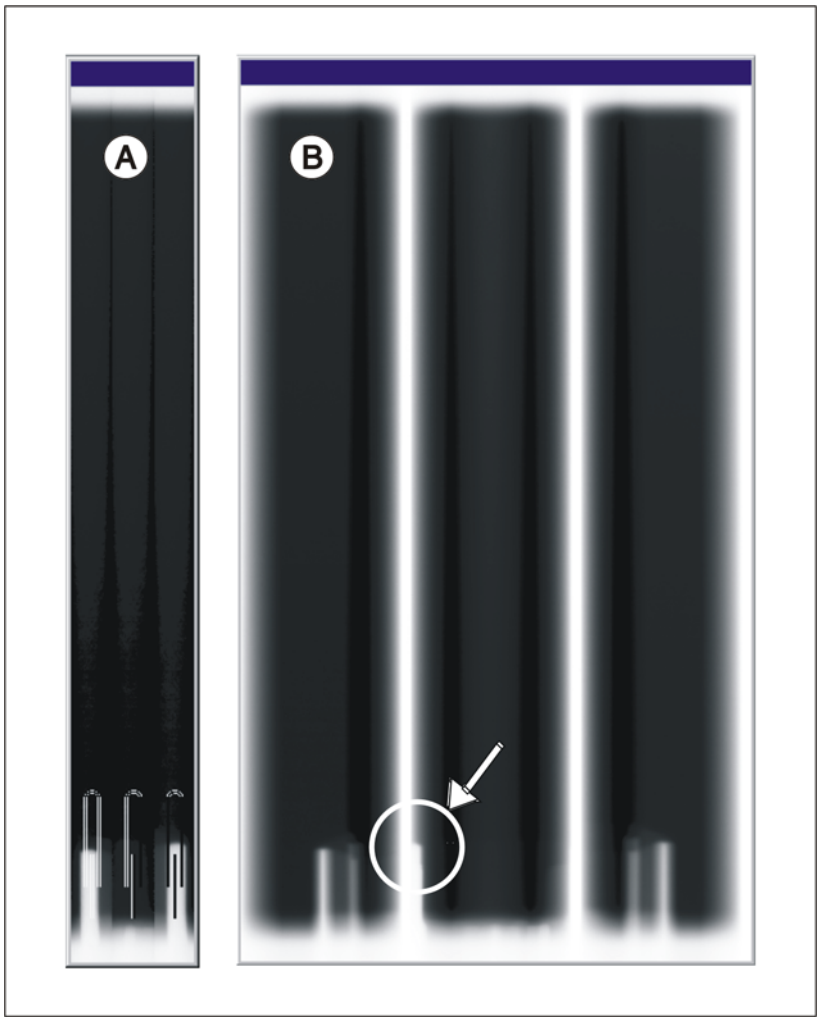


Image: X-ray image with unadjusted pan sensor:
Alternatively with precision adjustment setting B and coarse adjustment setting A

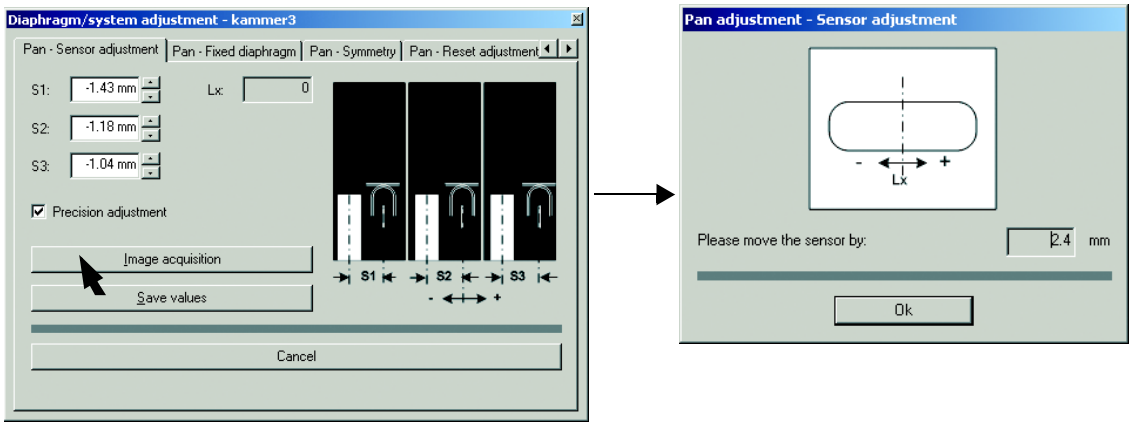
Coarse or precision adjustment?

Sensor adjustment can usually be performed directly via precision adjustment. Only in exceptional cases, e.g. if one or more needles are completely outside of the image field **(A)** in an image acquired with the **PRECISION ADJUSTMENT** presetting, is it necessary to perform a coarse adjustment prior to precision adjustment **(B)**. To do this, deactivate the **PRECISION ADJUSTMENT** check box (see page 111) and then perform a coarse adjustment proceeding in the same way as for precision adjustment. The only difference between coarse and precision adjustment is the size of the image area considered. Furthermore, there are fewer auxiliary lines in the coarse adjustment mode.

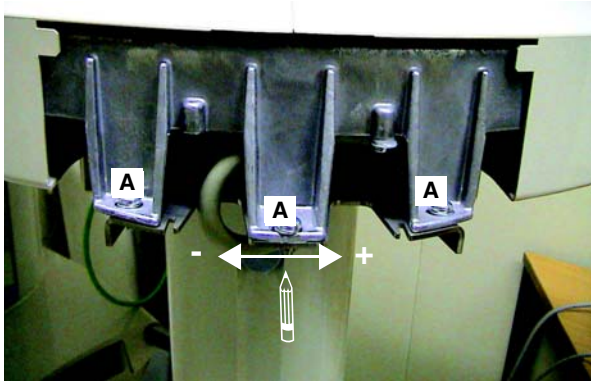
IMPORTANT

With SIDEXIS SW V01.45 and higher, a message window indicates whether a coarse adjustment is required on completion of the precision exposure.

5.



6.



System version 1: Fixed sensor holder

IMPORTANT

The default values for S1, S2 and S3 were automatically determined by SIDEXIS based on the exposure and entered in the text boxes of the menu.

For manual adjustment, the values displayed at this position in the text boxes of the menu can be overwritten.

First continue with the automatic adjustment. Manual determination of the adjustment values is required only if you fail to reach your goal via automatic adjustment (see page 120).

5. Make SIDEXIS XG ready for exposure:
Click **IMAGE ACQUISITION**

The
PAN - SENSOR ADJUSTMENT dialog box appears in Sidexis.

The dialog box suggests a value **Lx** for the mechanical adjustment of the sensor.

If the suggested value is greater than ±0.5 mm, then perform a mechanical adjustment of the sensor.

6. Adjust the sensor:

IMPORTANT

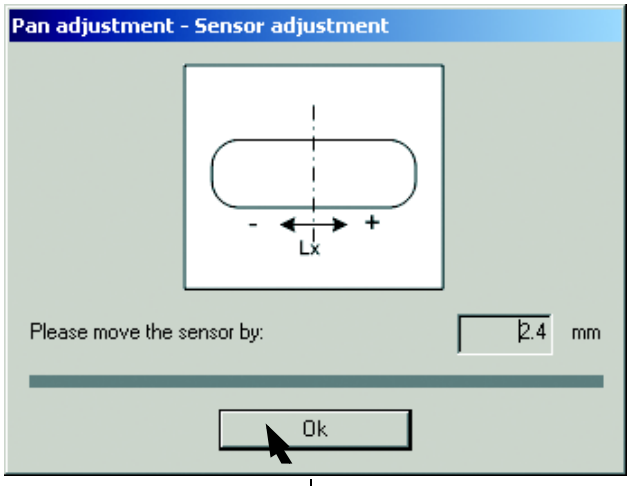
Positive sign =
Moves the sensor to the right
Negative sign =
Moves the sensor to the left

To do this, proceed as follows:

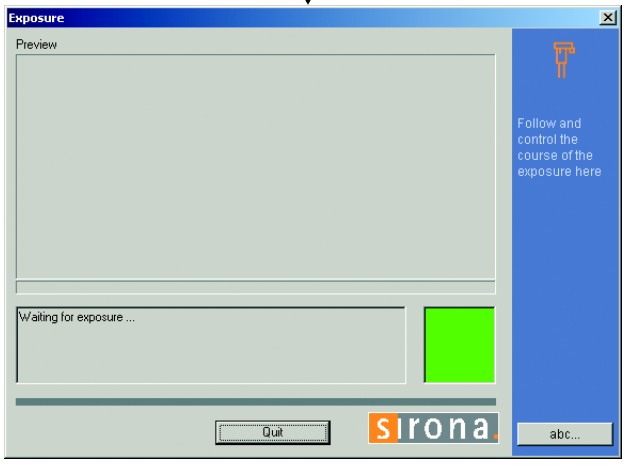
– Mark the current position of the sensor with a permanent marker.
– Loosen the three screws **A**
(approx. 2 turns, do not unscrew fully)
– Move the sensor to the left or right by the displayed value **Lx**.

Tighten screws **A** again.

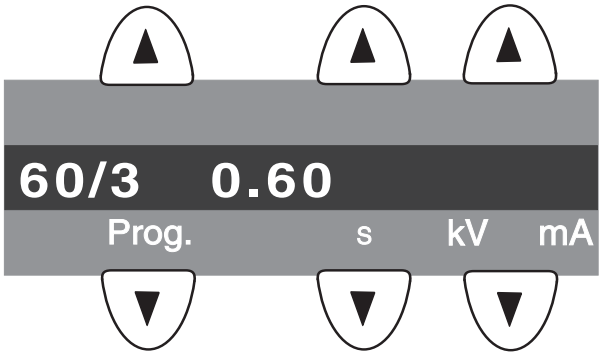
7.



in SIDEXIS



on the Multipad



7. Confirm the displacement of the sensor:

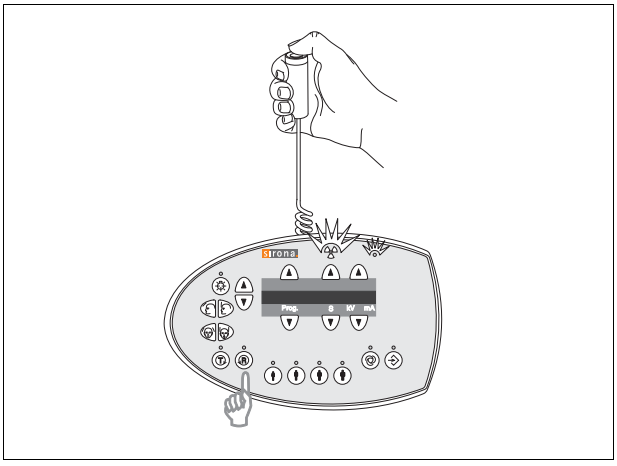
Click **OK**

The exposure dialog box showing the exposure status appears in Sidexis.

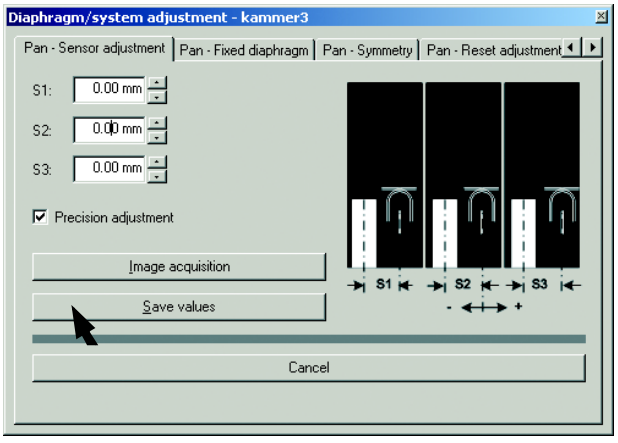
The initialization status is visualized by a progress indicator on the Multipad.

The initialization procedure is completed when the exposure parameters of service routine **S010.1** (60 kV / 3 mA; 0.6 s) are displayed and the progress indicator disappears.

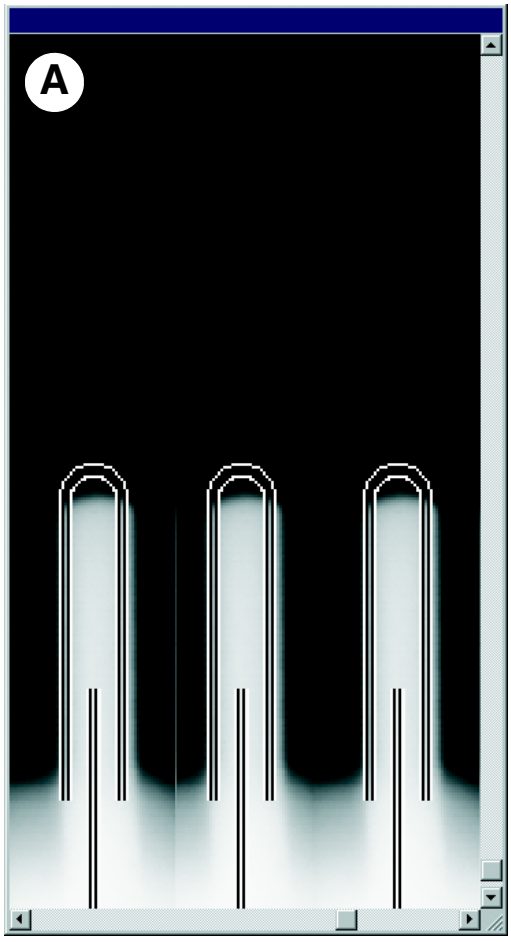
8.



10.



9.



Adjustment: ok

8. Take an exposure (60 kV/3 mA):

– Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

9. Evaluate the X-ray image:

– **The three needle images must lie in the center of the exposed areas and inside the auxiliary lines A.**

IMPORTANT

If these criteria are not yet fulfilled, repeat the adjustment procedure starting with step 5.

NOTICE

If you do not reach your goal via automatic adjustment, repeat the adjustment procedure with manually determined adjustment values (see page 120).

10. If the image is identical to the ideal image **A**, save the values:

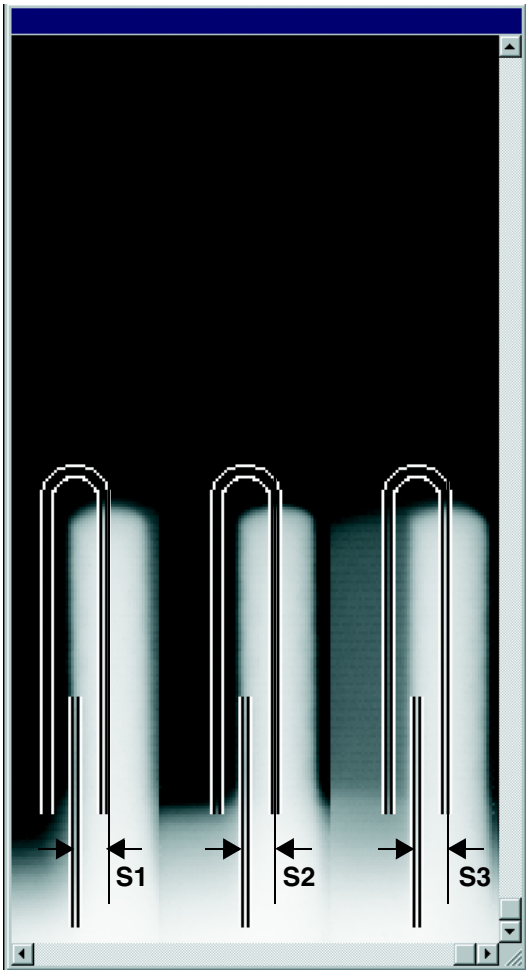
Click **SAVE VALUES**

IMPORTANT

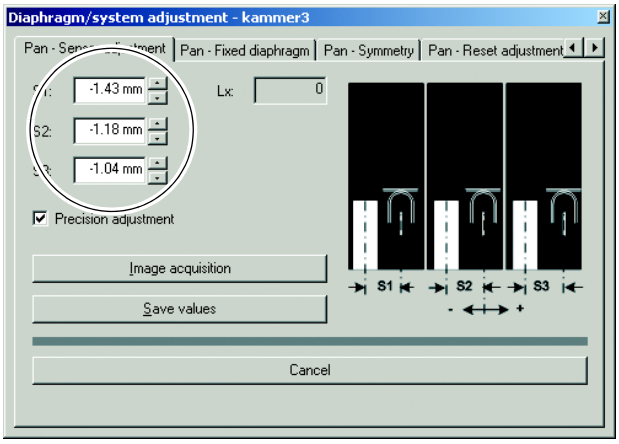
*In SIDEXIS versions V01.50 and higher the values for **S1 - S3** in the **PAN - SENSOR ADJUSTMENT** submenu are set **equal to zero** with a correct adjustment, i.e. if they are within the permissible tolerance. For versions < V01.50, the values in the text boxes may deviate slightly from zero even with a correct adjustment.*

- Go on to the next adjustment step.
- Reattach the fixed diaphragm (see page 113).

1.



2.



Manual adjustment of the PAN sensor

The manual adjustment procedure is similar to the one for automatic adjustment. The only difference is that the default adjustment values automatically determined by SIDEXIS are overwritten by manually determined adjustment values in the **PAN - SENSOR ADJUSTMENT** submenu.

1. Measure distances **S1**, **S2** and **S3** with the SIDEXIS measuring ruler.

IMPORTANT

To measure S1, S2 and S3, estimate the horizontal center position of the displayed needles. Measure in the lower area of the needles if possible, since they may have been bent slightly after repeated use.

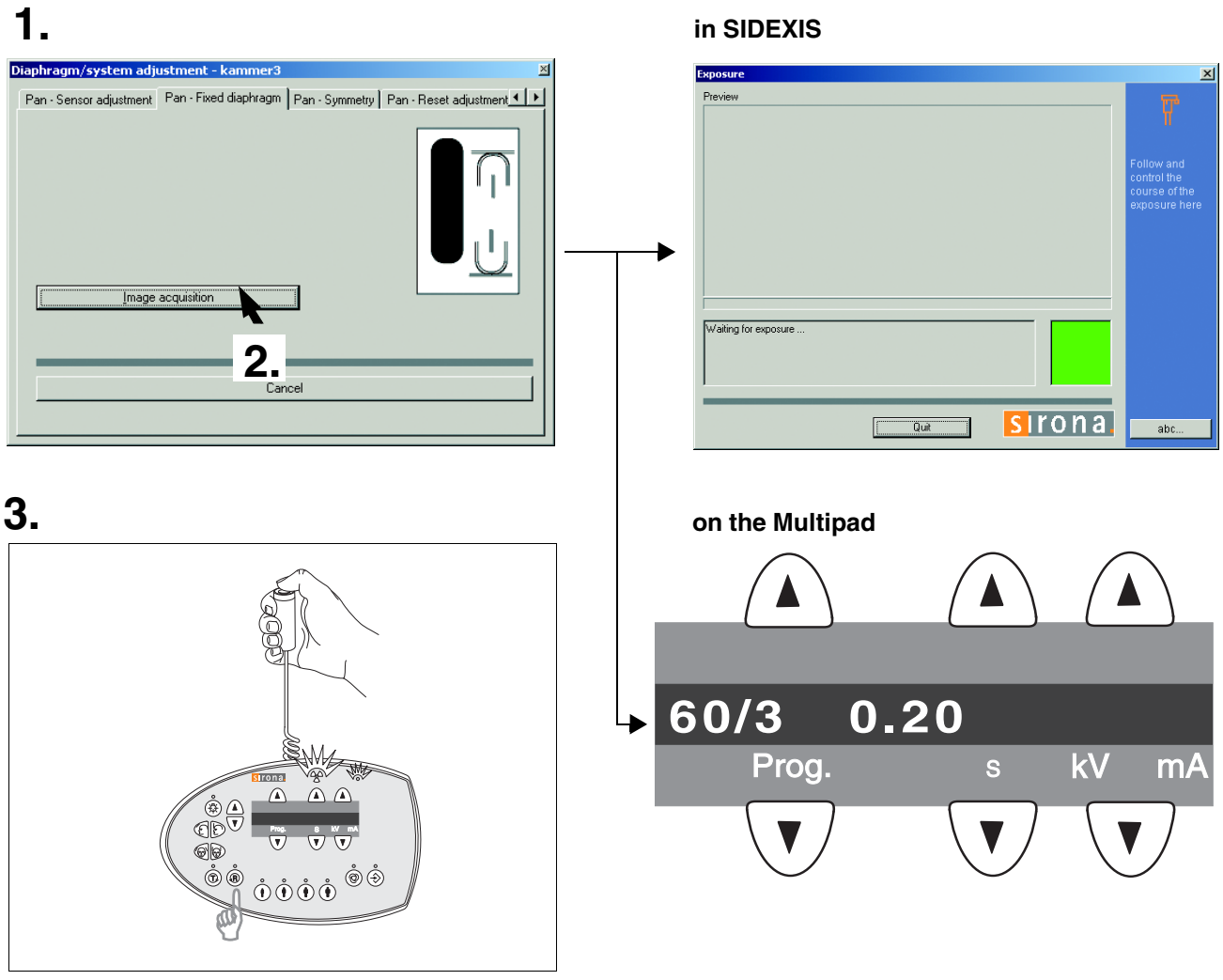
Tip: *To facilitate the measuring procedure, you can color the image in SIDEXIS (see also SIDEXIS Operator's Manual).*

2. Overwrite the default values for **S1, S2** and **S3** with the measured values in the text boxes of the **PAN - SENSOR ADJUSTMENT** submenu.

IMPORTANT

For information on the direction of displacement (input of +/ - sign in the menu) see page 110. Use points as decimal separators!

- Proceed with step 5 of the adjustment procedure on page 117.



11.2.6Adjusting the PAN diaphragm

IMPORTANT

The fixed diaphragm must be reattached for this adjustment step (see page 113).

- Remove the needle phantom from the bite block holder of the panoramic X-ray unit.

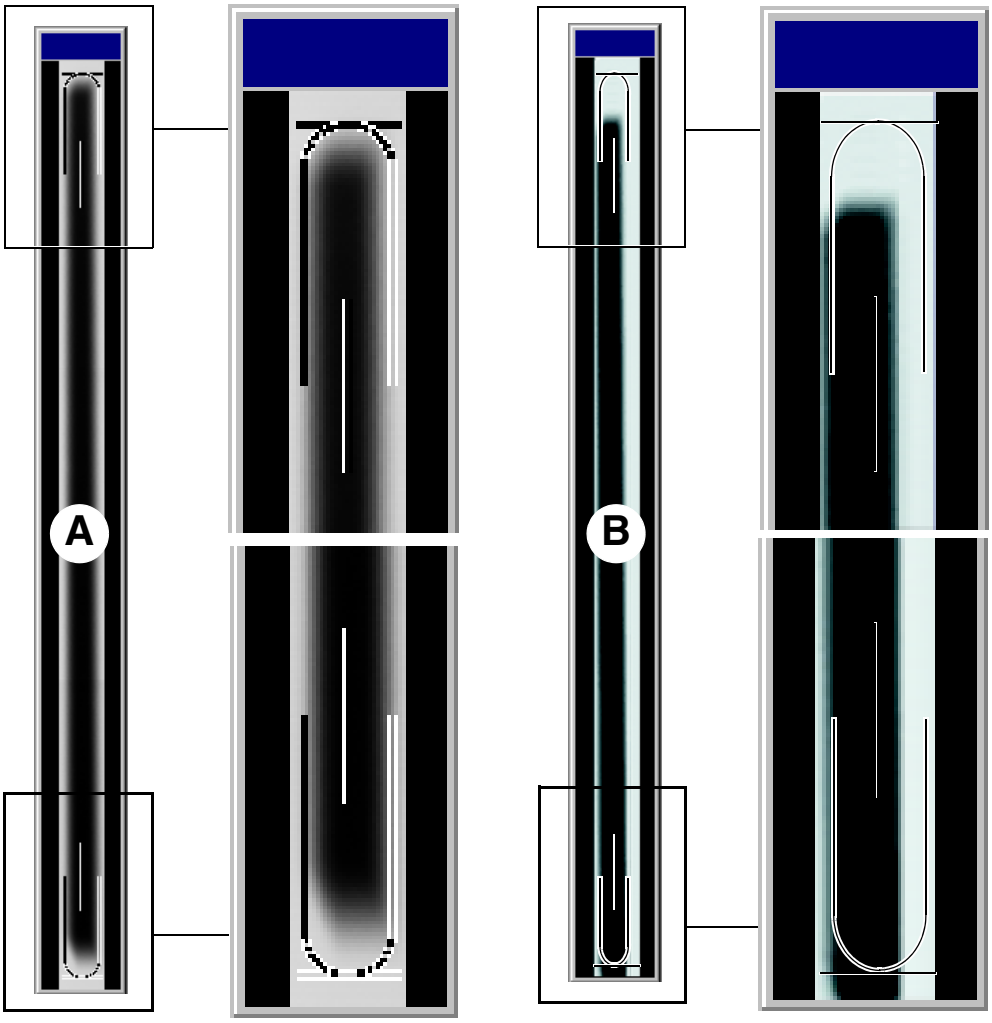
1. Go to the **PAN - DIAPHRAGM** submenu.
2. To make SIDEXIS XG ready for exposure:
   Click **IMAGE ACQUISITION**

   The exposure dialog box showing the exposure status appears in Sidexis.

   The initialization status is visualized by a progress indicator on the Multipad.

   The initialization procedure is completed when the exposure parameters of service routine **S030.2** (60 kV / 3 mA; 0.2 s) are displayed and the progress indicator disappears.
3. Take an exposure (60 kV/3 mA):
   – Press the **R key** on the Multipad to move the unit back to the starting position. Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

4.



Adjustment: ok

Adjustment: not ok

4. Evaluate the X-ray image:

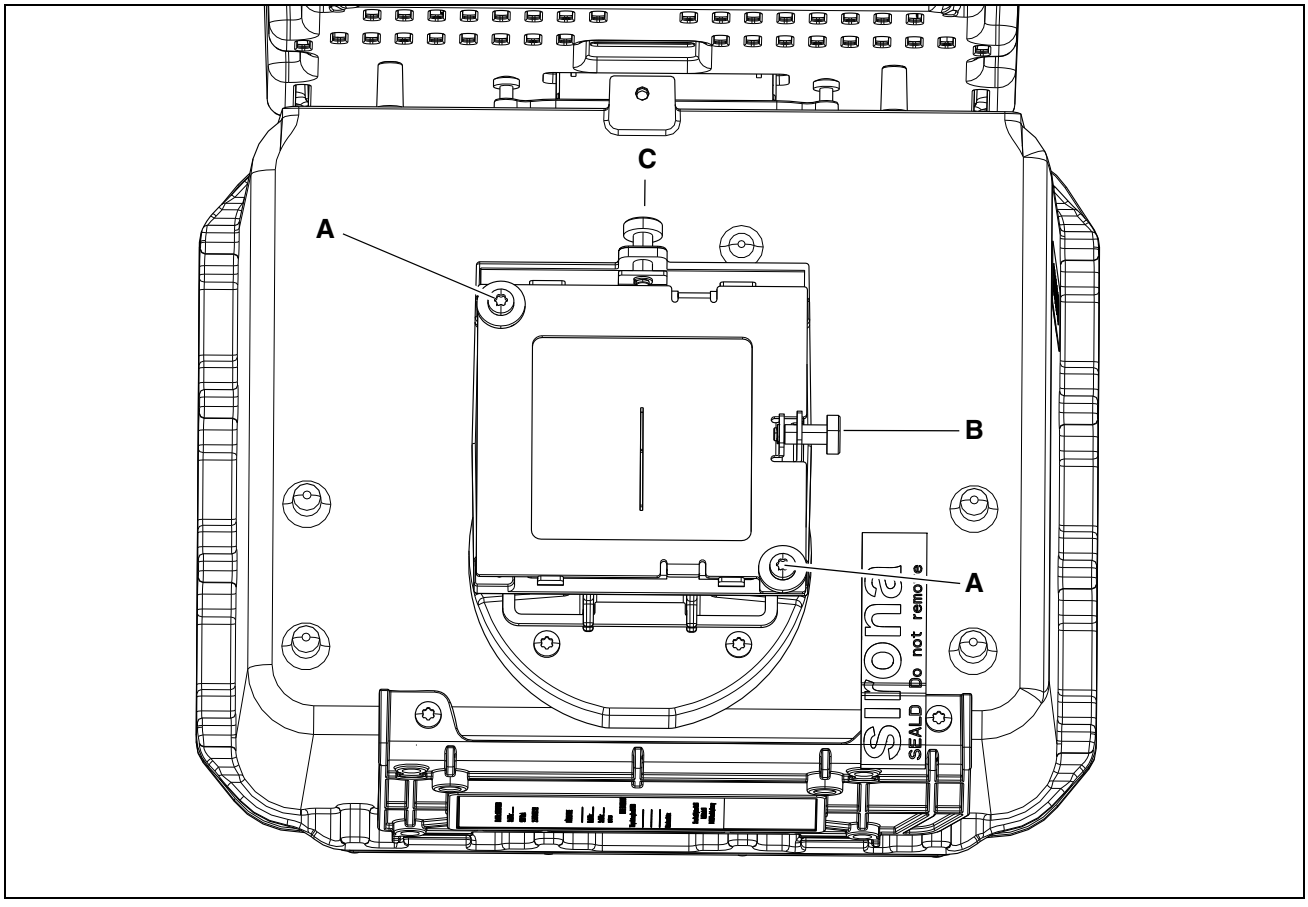
- **The exposed diaphragm area must lie horizontally centered in the image field as well as inside the superimposed auxiliary lines A.**
- **A white border surrounding the image on all sides must be visible. The maximum density must lie in the center of the diaphragm area A.**

IMPORTANT

*If these criteria are not fulfilled **B**, the pan diaphragm must be adjusted.*

NOTICE

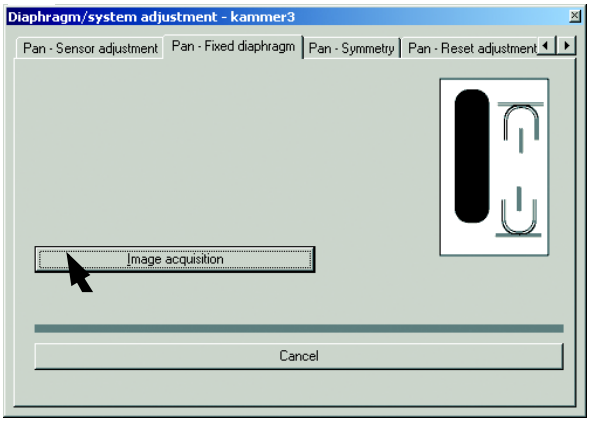
The adjustment of the pan diaphragm must be performed mechanically, i.e. this cannot be done via SIDEXIS!



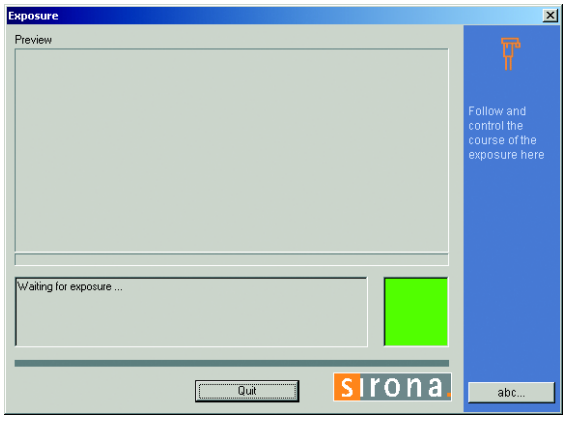
Manual adjustment of the pan diaphragm

- Remove the covers (see also page 113):
  - Tube assembly, front
  - Tube assembly, rear
- Loosen both screws **A** slightly (approx. 1 turn).
- Adjust the diaphragm position via adjusting screws **B** (horizontal adjustment) and **C** (vertical adjustment).
  - **B:** movement of the diaphragm to the **right or left**
  - **C:** movement of the diaphragm **upward or downward**
- Tighten the screws **A** again.

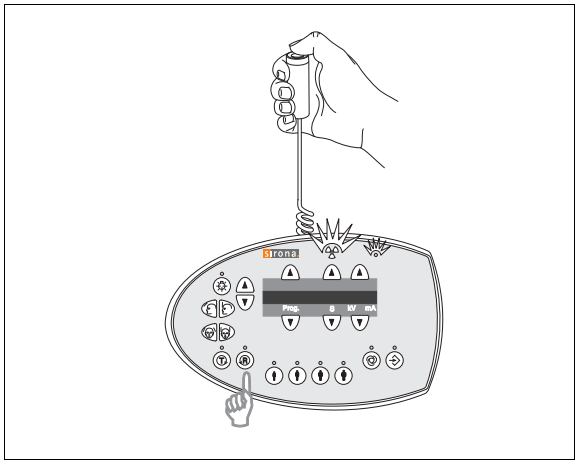
5.



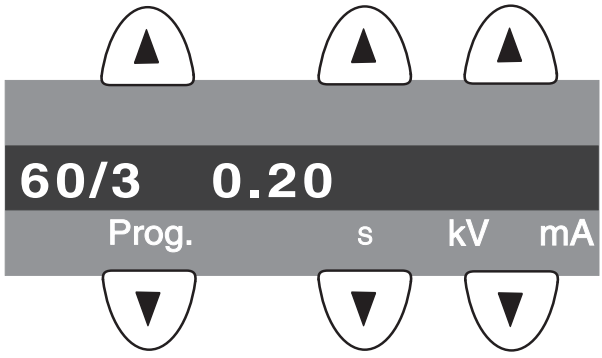
in SIDEXIS



6.



on the Multipad



5. Make SIDEXIS XG ready for exposure:
Click **IMAGE ACQUISITION**

The exposure dialog box showing the exposure status appears in Sidexis.

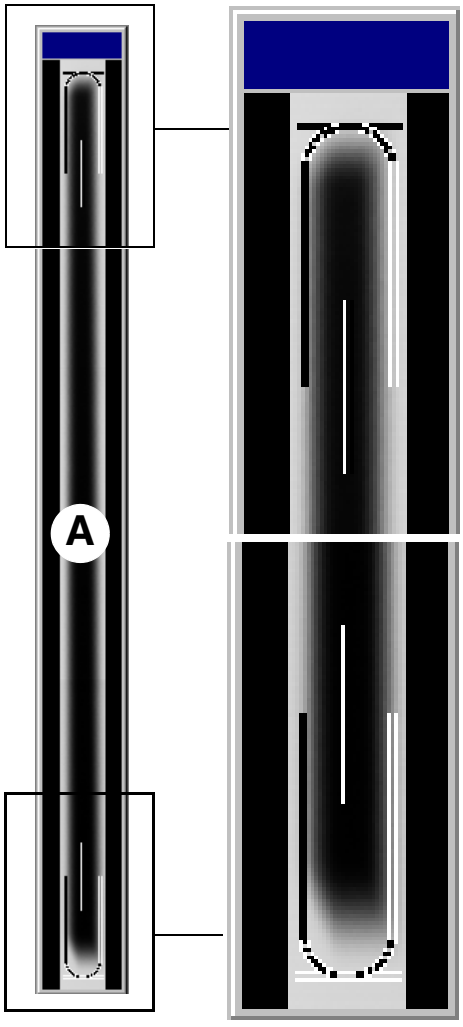
The initialization status is visualized by a progress indicator on the Multipad.

The initialization procedure is completed when the exposure parameters of service routine **S030.2** (60 kV / 3 mA; 0.2 s) are displayed and the progress indicator disappears.

6. Take an exposure (60 kV/3 mA):

– Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

7.



7. Evaluate the X-ray image:

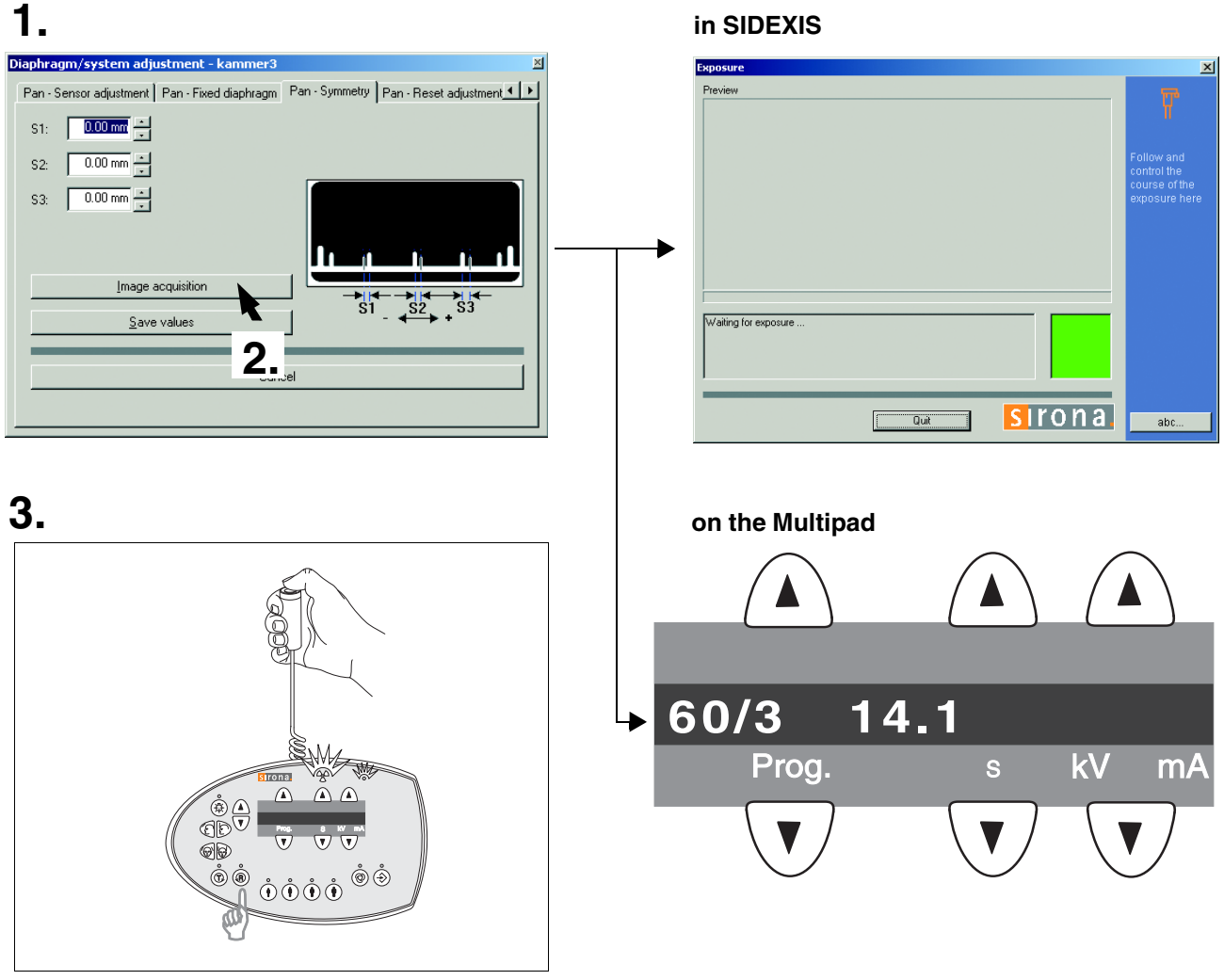
- **– The exposed diaphragm area must lie horizontally centered in the image field as well as inside the superimposed auxiliary lines A.**
- **– A white border surrounding the image on all sides must be visible. The maximum density must lie in the center of the diaphragm area A.**

IMPORTANT

If these criteria have not yet been fulfilled, repeat the mechanical adjustment of the diaphragm (see page 123) and then continue with step 5.

If the image is identical to the ideal image **(A)**, then the adjustment of the diaphragm is completed:

- Reattach the covers.
- Go on to the next adjustment step.



11.2.7Adjusting the PAN symmetry

- Insert the needle phantom in the bite block holder of the panoramic X-ray unit (see page 112).

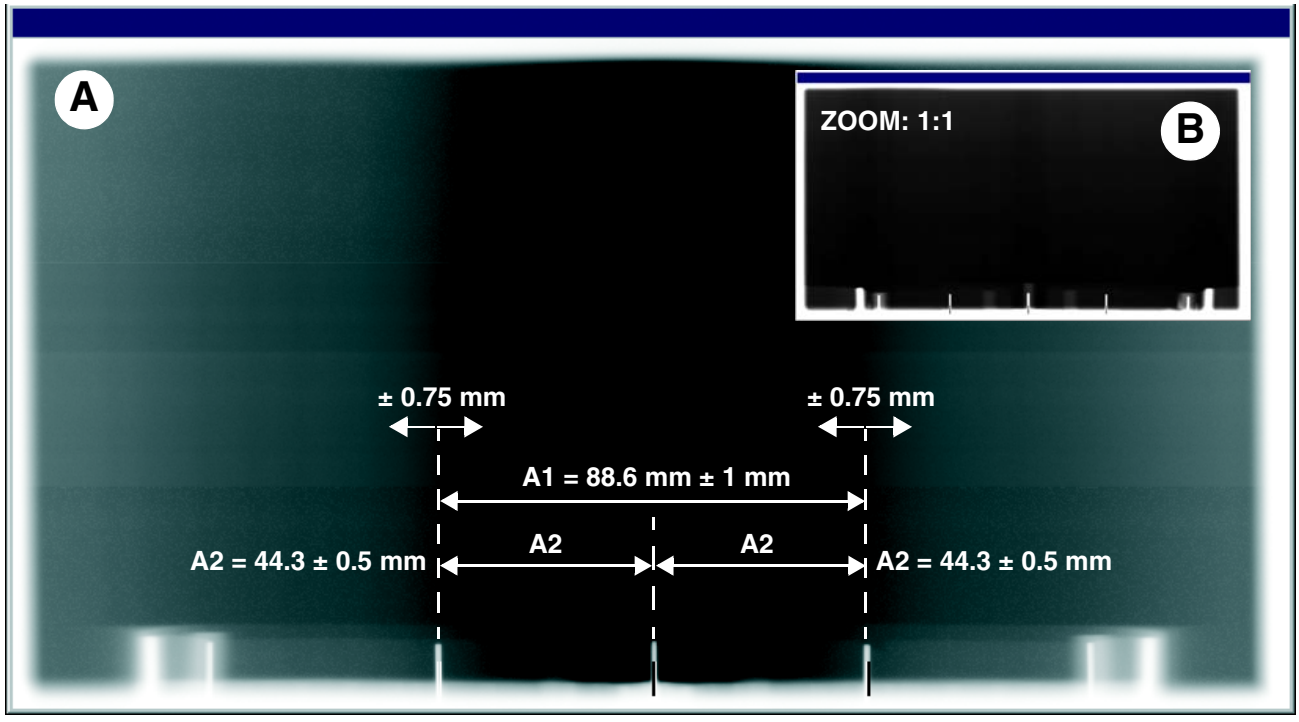
1. Go to the **PAN - SYMMETRY** submenu.
2. To make SIDEXIS XG ready for exposure:
   Click **IMAGE ACQUISITION**

   The exposure dialog box showing the exposure status appears in Sidexis.

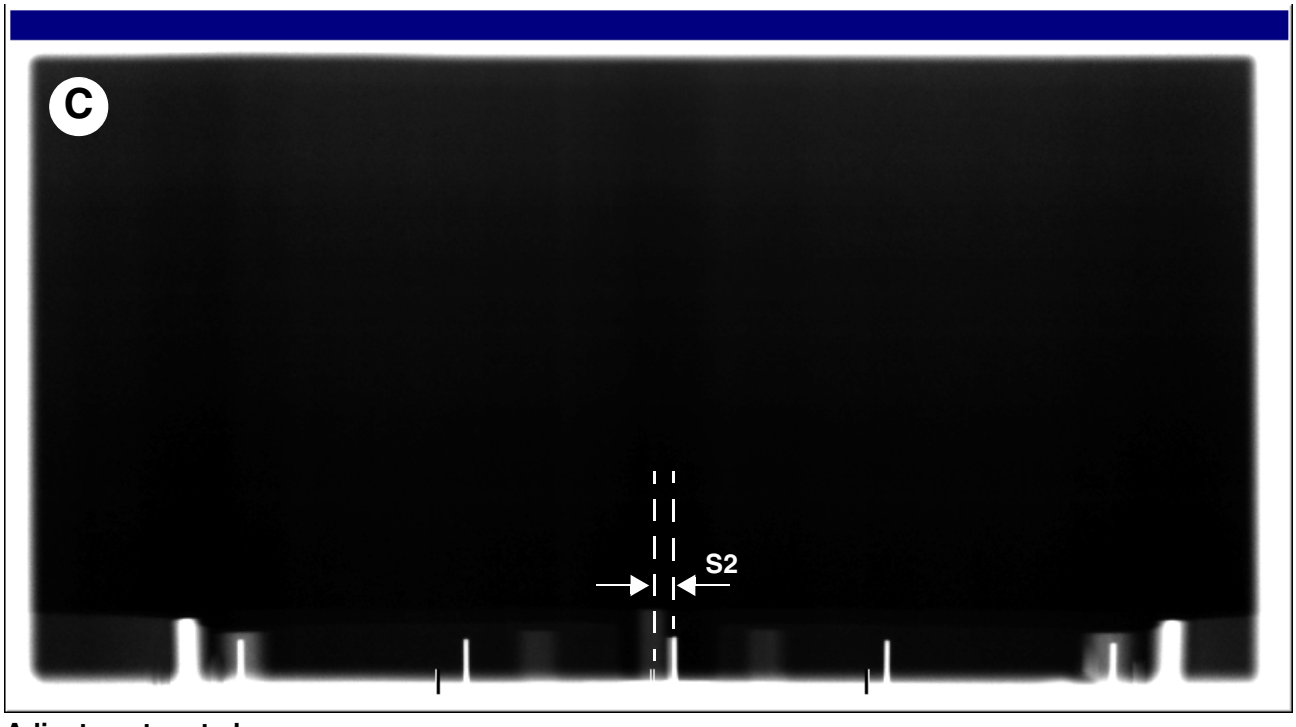
   The initialization status is visualized by a progress indicator on the Multipad.

   The initialization procedure is completed when the exposure parameters of service routine **S010.2** (60 kV / 3 mA; 14.1 s) are displayed and the progress indicator disappears.
3. Take an exposure (60 kV/3 mA):
   – Press the **R key** on the Multipad to move the unit back to the starting position.
   – Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

4.



Adjustment: ok (length measurement with SIDEXIS)



Adjustment: not ok

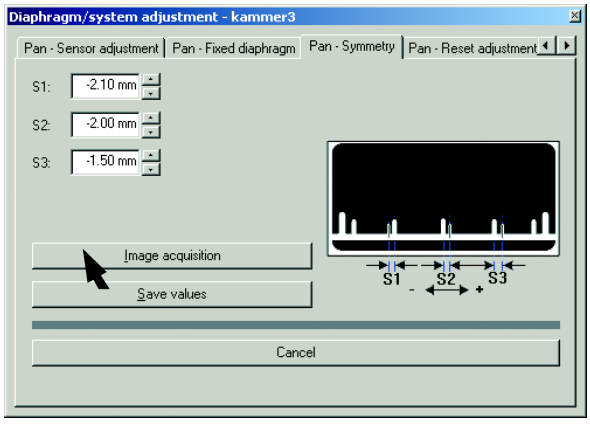
4. Evaluate the X-ray image (see page 127):

- **The shadow of the center needle, the needle image and the auxiliary line must be coincident and located behind each other.**
  A tolerance (offset of needle from the central auxiliary line) of ± 0.75 mm is admissible A.
- **Distance A1 must be 88.6 ± 1 mm A.**
- **Distances A2 must be identical, each being 44.3 ± 0.5 mm A.**
- **A white border surrounding the image on all sides must be visible B.**

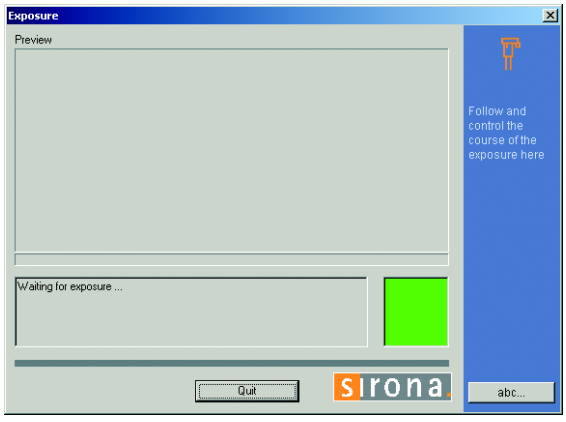
IMPORTANT

*If one of these criteria is not fulfilled **C**, the pan symmetry must be adjusted.*

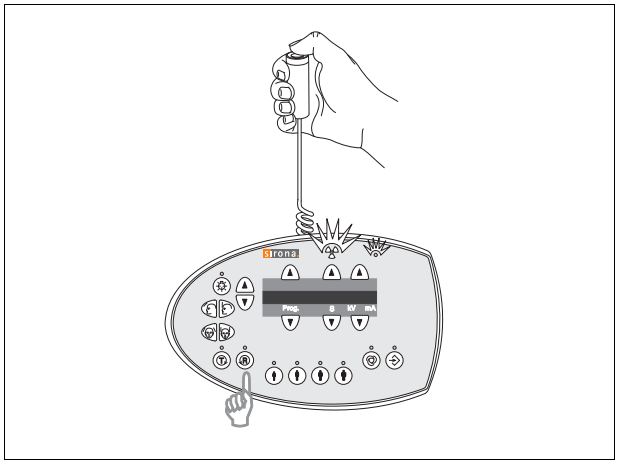
5.



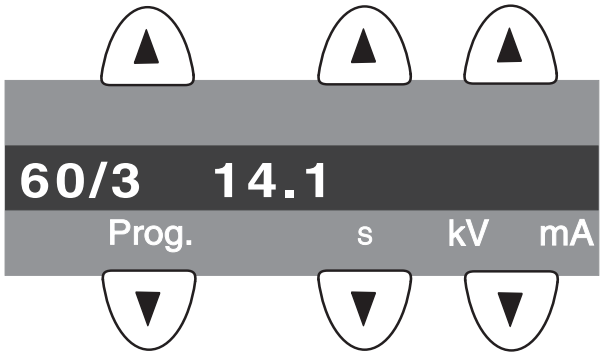
in SIDEXIS



6.



on the Multipad



IMPORTANT

The default values for S1, S2 and S3 were automatically determined by SIDEXIS based on the exposure and entered in the text boxes of the menu.

For manual adjustment, the values displayed at this position in the text boxes of the menu can be overwritten.

First continue with the automatic adjustment. Manual determination of the adjustment values is required only if you fail to reach your goal via automatic adjustment (see page 132).

5. Make SIDEXIS XG ready for exposure:
Click **IMAGE ACQUISITION**

The exposure dialog box showing the exposure status appears in Sidexis.

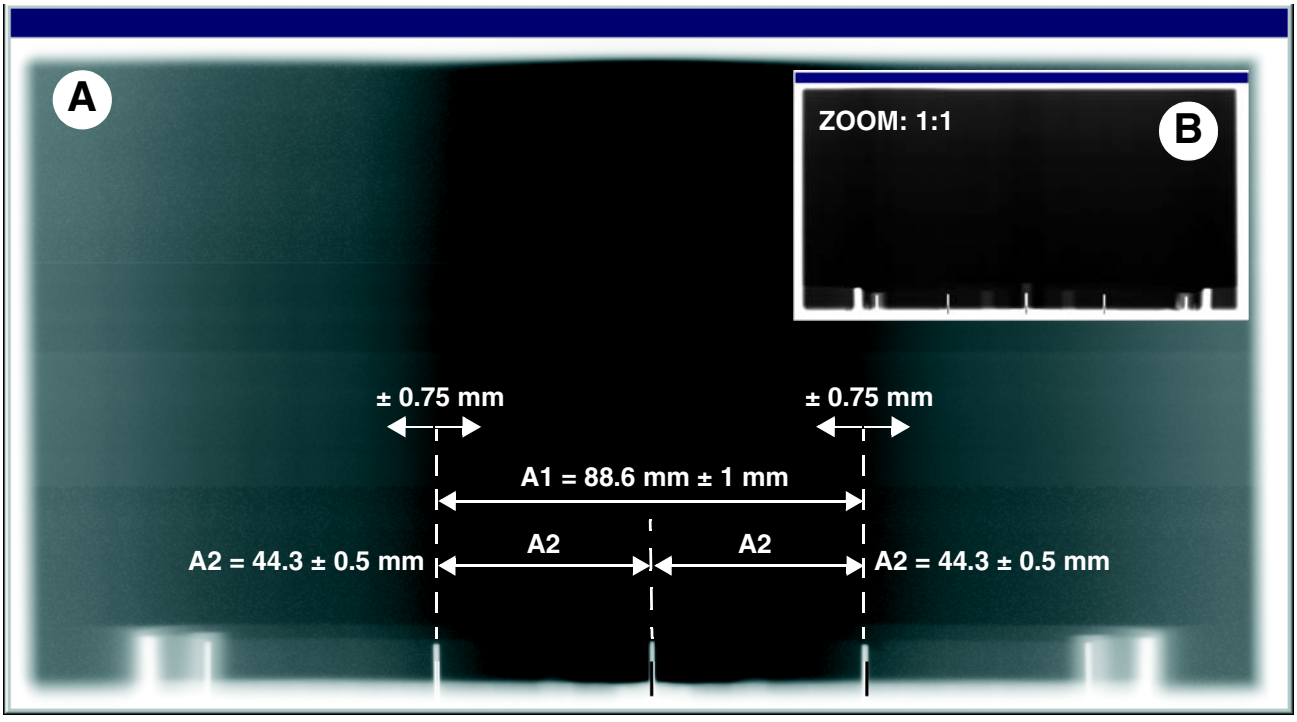
The initialization status is visualized by a progress indicator on the Multipad.

The initialization procedure is completed when the exposure parameters of service routine **S010.2** (60 kV / 3 mA; 14.1 s) are displayed and the progress indicator disappears.

6. Take an exposure (60 kV/3 mA):

– Press the release button. Hold down the release button until image acquisition is completed and the preview image appears in the exposure dialog box.

7.



Adjustment: ok (length measurement with SIDEXIS)

7. Evaluate the X-ray image:

- **The shadow of the center needle, the needle image and the auxiliary line must be coincident and located behind each other.**
  A tolerance (offset of needle from the central auxiliary line) of ± 0.75 mm is admissible A.
- **Distance A1 must be 88.6 ± 1 mm A.**
- **Distances A2 must be identical, each being 44.3 ± 0.5 mm A.**
- **A white border surrounding the image on all sides must be visible B.**

IMPORTANT

Always measure exactly from pin center to pin center.

IMPORTANT

If the X-ray image still does not correspond to the ideal image, it is possible that one or more criteria have not yet been fulfilled:

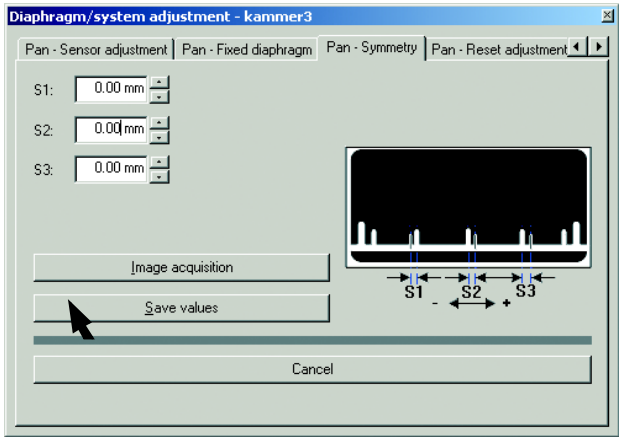
Case 1: Center needle not coincident with auxiliary line
If the shadow of the center needle, the needle image and the auxiliary line do not yet coincide, then repeat the adjustment procedure starting with step 5.

Case 2: Symmetry not OK
If the shadow of the center needle, the needle image and the auxiliary line coincide, but the symmetry or the distance between the two outer needles is not yet correct, then repeat the adjustment procedure starting with step 5.

IMPORTANT

If you do not reach your goal via automatic adjustment, repeat the adjustment procedure with manually determined adjustment values (see page 132).

8.



8. If all criteria are fulfilled and the current image is identical to the ideal image **A + B**, then save the values:

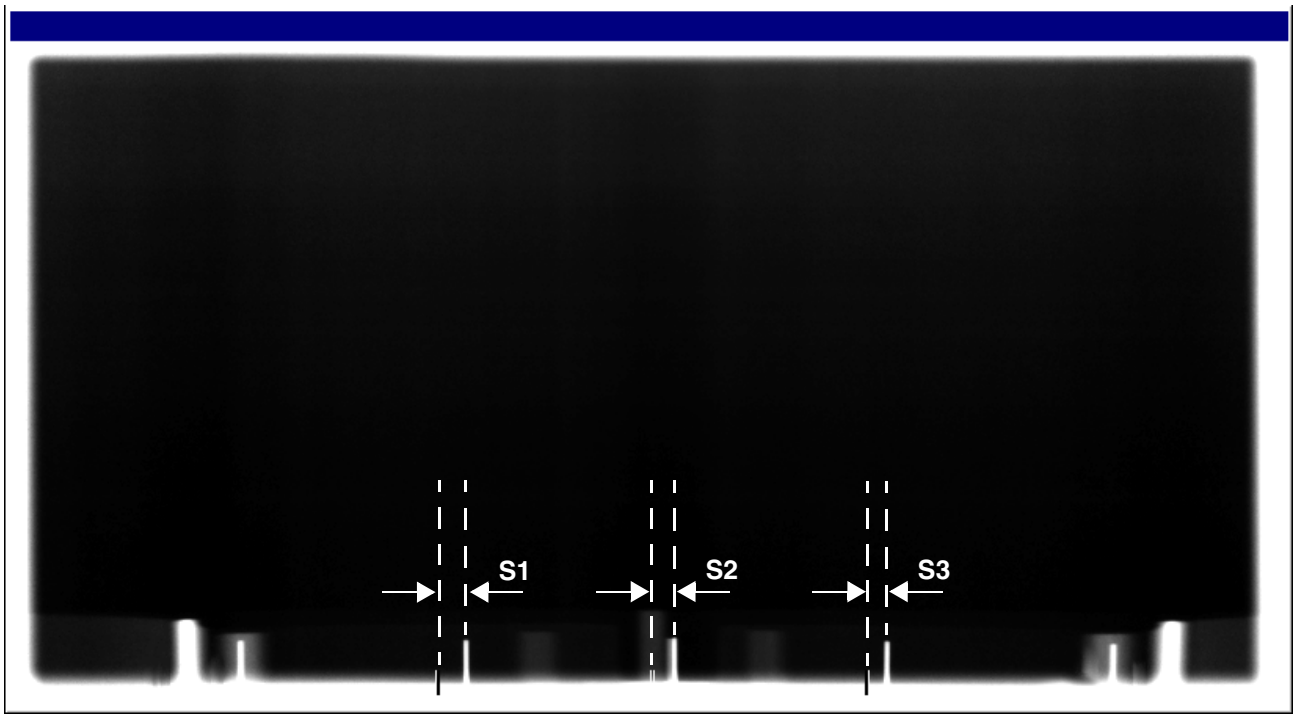
Click **SAVE VALUES**

IMPORTANT

*In SIDEXIS versions V01.50 and higher, the values for **S1**, **S2** and **S3** in the **PAN - SYMMETRY** submenu are set **equal to zero** with a correct adjustment, i.e. if they are within the permissible tolerance. For versions < V01.50, the values in the text boxes may deviate slightly from zero even with a correct adjustment.*

- The adjustment of the panoramic X-ray unit is now completed.

1.



Manual adjustment of the PAN symmetry

The manual adjustment procedure is similar to the one for automatic adjustment. The only difference is that the default adjustment values automatically determined by SIDEXIS are overwritten by manually determined adjustment values in the **PAN - SYMMETRY** submenu.

1. Measure distances **S1, S2** and **S3** with the SIDEXIS measuring ruler.

IMPORTANT

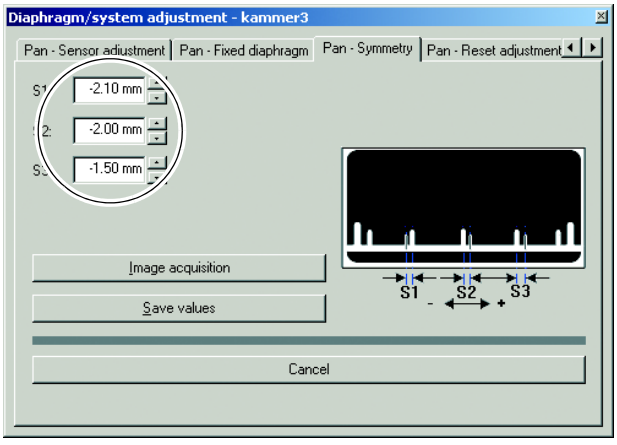
Measure in the lower area of the needles if possible, since they may have been bent slightly after repeated use.

Always measure exactly from pin center to pin center.

IMPORTANT

***Tip:** To facilitate the measuring procedure, you can color the image in SIDEXIS (see also SIDEXIS Operator's Manual).*

2.



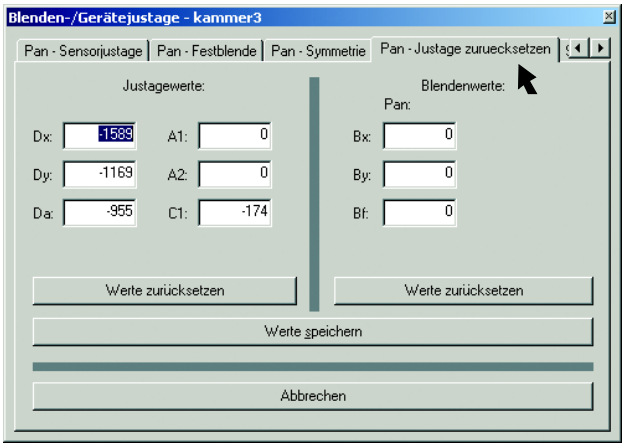
2. Overwrite the default values for **S1, S2** and **S3** with the measured values in the text boxes of the **PAN - SYMMETRY** submenu.

IMPORTANT

For information on the direction of displacement (input of +/- sign in the menu) see page 110. Use points as decimal separators!

- Proceed with step 5 of the adjustment procedure on page 129.

1.



11.2.8Resetting the adjustment

NOTICE

Important: Make sure to note down the values displayed in the text boxes before modifying them. This will enable you to reset the adjustment values to the factory settings if necessary.

Contact the SIRONA Customer Service Center for more information (or to enable the menu):

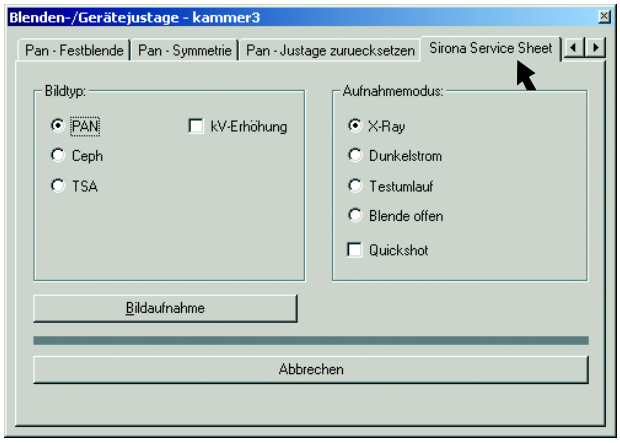
Phone: 0 62 51 / 16 - 16 70

The **DIAPHRAGM/SYSTEM ADJUSTMENT** menu offers you the possibility of resetting or manually modifying any or all of the pan adjustment settings you have made **in very exceptional cases**.

- To reset the pan settings, open the **PAN - RESET ADJUSTMENT** menu **(1.)**.

IMPORTANT

If the adjustment values have been reset, the unit must be readjusted.

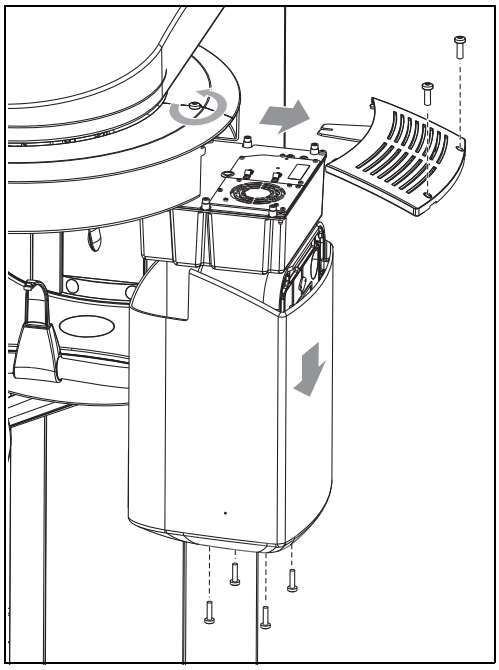


11.2.9Sirona Service Sheet

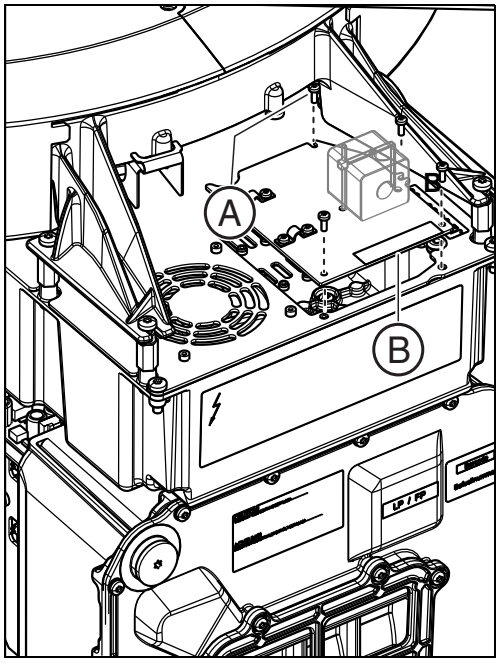
This menu is intended only for internal use and is not required for installation.

11.3Demo mode

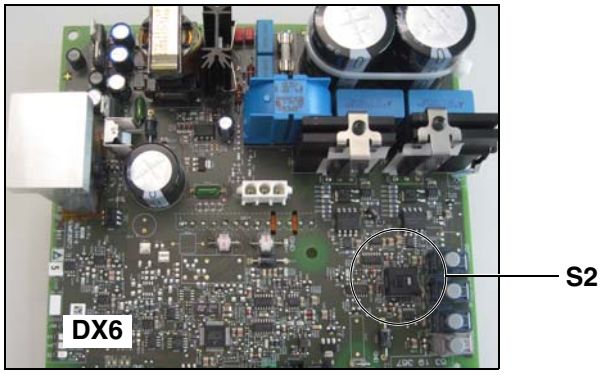
1.



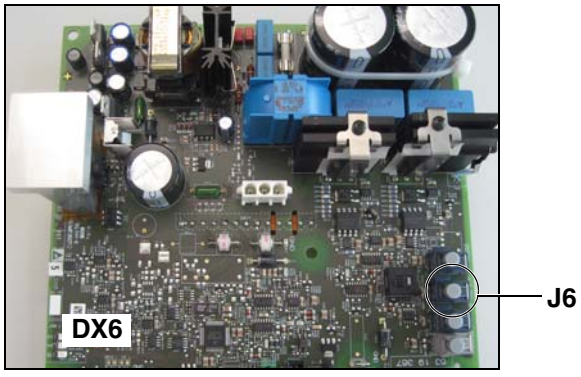
2.



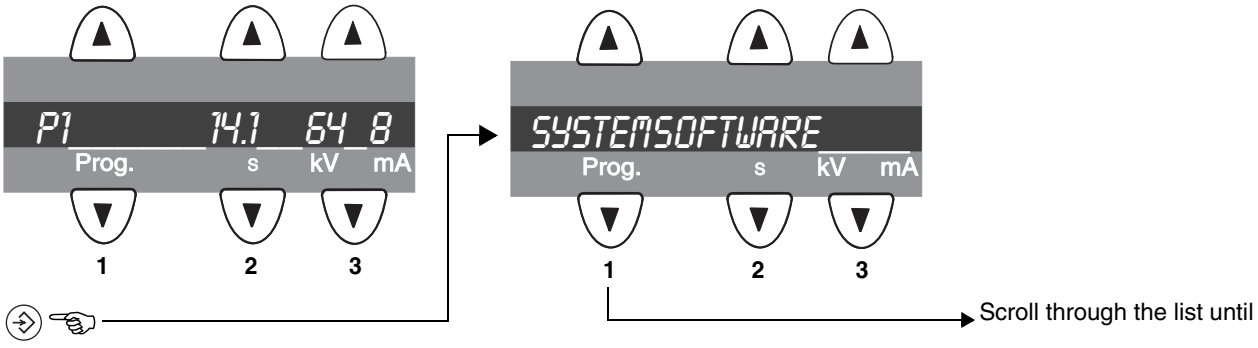
3.



4.



5.



11.3.1 Switching the demo mode ON

When operated in demo mode, the unit must not release any radiation. For this reason, you must take the following safety measures:

1. Remove the cover of the tube assembly.
2. Loosen screws **A** and remove cover plate **B**.
3. Set DIP switch **S2** (DX6) to **position 2**.
4. Pull cable **L5** (X-RAY) off of connector **J6** (DX6).
   Radiation release is now no longer possible.
5. Check the mode using the Info menu.
   Demo mode: ON means that: The demo mode is switched ON
   (Radiation release is not possible)
   Demo mode: OFF means: The demo mode is switched OFF
   (Radiography, X-ray radiation are possible!)

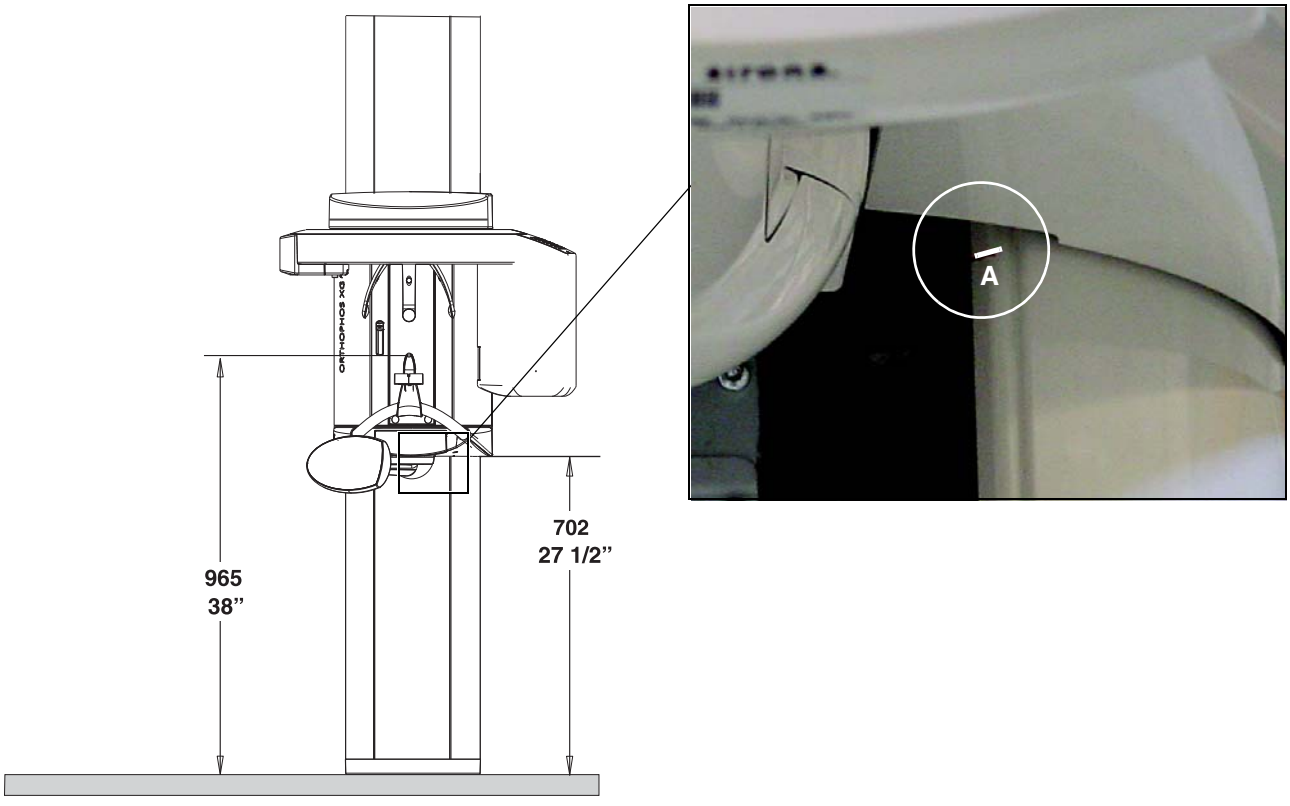
- Reattach cover plate **B** and the tube assembly covers by following the dismantling procedure in reverse order.

11.3.2 Switching the demo mode OFF

1. Remove the cover of the tube assembly.
2. Loosen screws **A** and remove cover plate **B**.
3. Set DIP switch **S2** (DX6) to **position 1**.
4. Connect cable **L5** (X-RAY) to connector **J6** (DX6).
   Radiation release is now once again possible.
5. Check the mode using the Info menu.
   Demo mode: ON means that: The demo mode is switched ON
   (Radiation release is *not* possible)
   Demo mode: OFF means: The demo mode is switched OFF
   (Radiography, X-ray radiation are possible!)

- Reattach cover plate **B** and the tube assembly covers by following the dismantling procedure in reverse order.

1.

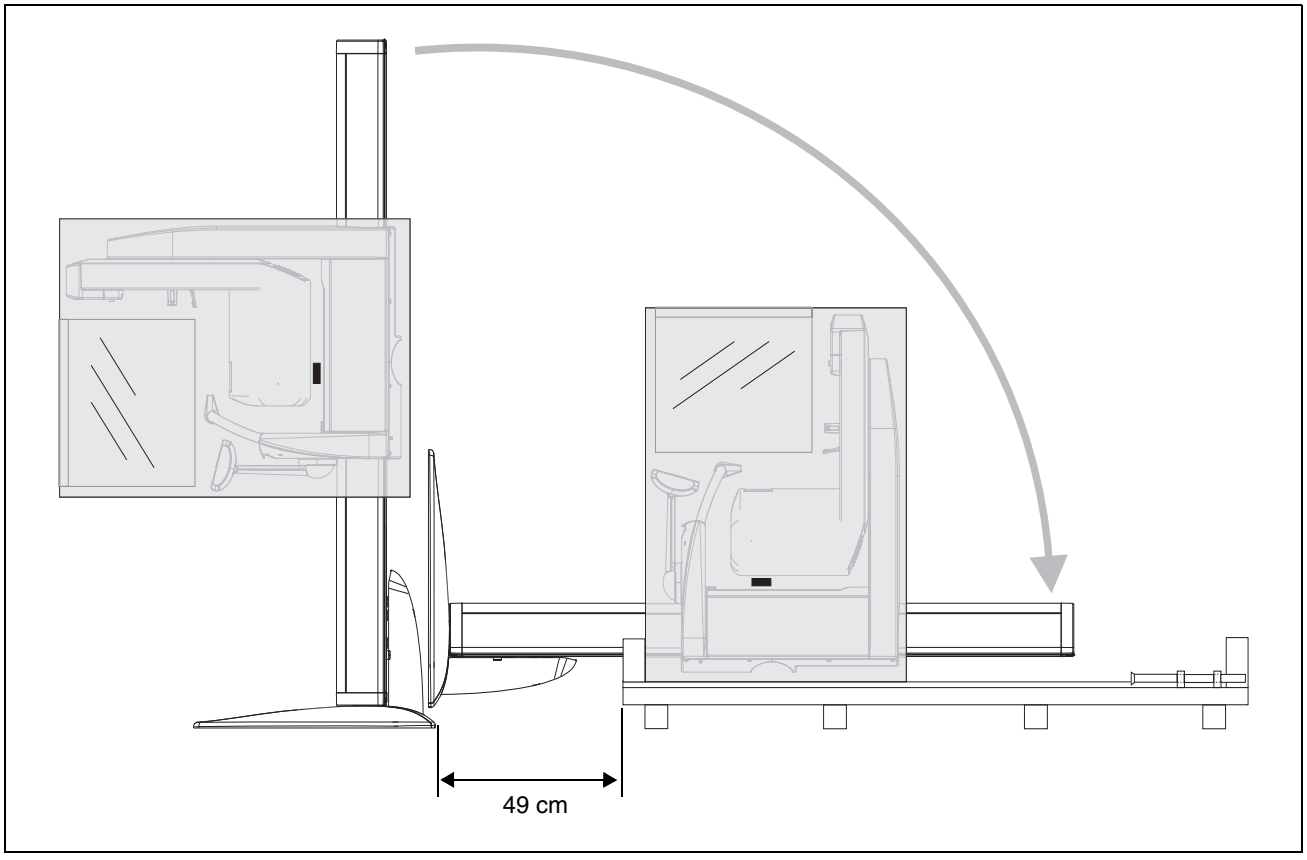


11.3.3Important information for repacking and transport

1. Switch the panoramic X-ray unit on and move it to its packing height by pressing the **UP/DOWN** keys on the Multipad.
   – Bite block height = 965 mm (displayed as height on the Multipad)
   – Bottom edge of slide cover = 702 mm

IMPORTANT
The bottom edge of the slide cover must be at the same height as the A markings in the column.

- To uninstall and pack the unit, follow the installation procedure in reverse order.



For units installed with a floor stand

NOTICE

Before laying the unit down on the pallet, swivel the X-ray tube assembly inward and make sure to attach the center styrofoam part.

To ensure that the unit is in a position suitable for dismantling the floor stand after it is laid down on the pallet, check to make sure that the distance between the pallet and the back of the unit is approx. 49 cm before laying it down.

We reserve the right to make any alterations which may be required due to technical improvements.

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